

Service Manual



DV-676A-S

ORDER NO.
RRV2960

DVD PLAYER

DV-676A-S

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Region No.	Serial No. Confirm 3rd & 4th alphabetical letters.
DV-676A-S	RPWXCN	AC110-127V/220-240V	4	&&TE#####\$\$
DV-676A-S	RLFXJ	AC110-127V/220-240V	3	&&MP#####\$\$
DV-676A-S	RTXJN	AC110-127V/220-240V	3	&&TM#####\$\$



For details, refer to "Important symbols for good services".

SAFETY INFORMATION



This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING !

THE AEL (ACCESSIBLE EMISSION LEVEL) OF THE LASER POWER OUTPUT IS LESS THAN CLASS 1 BUT THE LASER COMPONENT IS CAPABLE OF EMITTING RADIATION EXCEEDING THE LIMIT FOR CLASS 1.
A SPECIALLY INSTRUCTED PERSON SHOULD DO SERVICING OPERATION OF THE APPARATUS.

LASER DIODE CHARACTERISTICS

FOR DVD : MAXIMUM OUTPUT POWER : 5 mW
WAVELENGTH : 650 nm
FOR CD : MAXIMUM OUTPUT POWER : 5 mW
WAVELENGTH : 780 nm

LABEL CHECK

[RPW and RT types]

CAUTION : VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
VORSICHT : SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG, WENNABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETZEN!
ADVARSEL : SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING UND GÅ UDSÆTTELSE FOR STRÅLING.
VARNING : SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD BETRÄKTA EJ STRÅLEN.
VARO! : AVATTAESSA ALTISTUT NÄKYVÄ JA NÄKYMÄTTÖMÄLLE LASERSATEIL YLLE. ÄLÄ KATSO SÄTEESIEN.
CAUIDADO : RADIACIÓN LASER VISIBLE E INVISIBLE AL ESTAR ABIERTO. EVITAR EXPOSICIÓN AL RAYO.

VRW1872

[RLF type]

CAUTION : VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.

注意 : 若打開會發生可見和不可見的鐳射輻射，請勿受輻射。

VRW1961

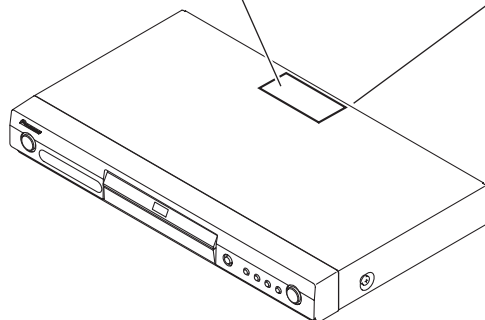
Additional Laser Caution

1. Laser Interlock Mechanism
 - Loading switch (S101 on the LOAB Assy) is used for interlock mechanism of the laser.When this switch turned ON in SW2 (CLOSE) side (OPEN signal is 0V and CLOSE signal is 3.5V), a laser becomes the status which can completely oscillation.
Furthermore, the laser completely oscillates in the disc judgment and disc playback.
When player is power ON state and laser diode is not completely oscillating, 780nm laser diode is always oscillating by half power.
 - Laser diode is driving with Q7 (650nm LD) and Q8 (780nm LD) on the DVDM Assy.Therefore, when short-circuit between the emitter and collector of these transistors or the base voltage is supplied for transistors turn on, the laser oscillates. (failure mode)
 - In the test mode *, there is the mode that the laser oscillates except for the disc judgment and playback. LD ON mode in the test mode oscillates with the laser forcibly.The interlock mechanism mentioned above becomes invalid in this mode.
2. When the cover is open, close viewing through the objective lens with the naked eye will cause exposure to the laser beam.

* : See page 48.

(Printed on the Rear Panel)

CLASS 1
LASER PRODUCT



[Important symbols for good services]

In this manual, the symbols shown-below indicate that adjustments, settings or cleaning should be made securely. When you find the procedures bearing any of the symbols, be sure to fulfill them:

1. Product safety

You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.

2. Adjustments

To keep the original performances of the product, optimum adjustments or specification confirmation is indispensable. In accordance with the procedures or instructions described in this manual, adjustments should be performed.

3. Cleaning

For optical pickups, tape-deck heads, lenses and mirrors used in projection monitors, and other parts requiring cleaning, proper cleaning should be performed to restore their performances.

4. Shipping mode and shipping screws

To protect the product from damages or failures that may be caused during transit, the shipping mode should be set or the shipping screws should be installed before shipping out in accordance with this manual, if necessary.

5. Lubricants, glues, and replacement parts

Appropriately applying grease or glue can maintain the product performances. But improper lubrication or applying glue may lead to failures or troubles in the product. By following the instructions in this manual, be sure to apply the prescribed grease or glue to proper portions by the appropriate amount. For replacement parts or tools, the prescribed ones should be used.

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1. SPECIFICATIONS

Specifications

General

System DVD player
Power requirements

DV-676A-S AC 110–127/220–240 V, 50/60 Hz
Power consumption

DV-676A-S 12 W
Power consumption (standby)

DV-676A-S 0.12 W
Weight 2.1 kg / 4 lb 10 oz
Dimensions . . . 420 (W) x 55 (H) x 243 (D) mm
. (16.5 (W) x 2.2 (H) x 9.6 (D) in.)

Operating temperature +5°C to +35°C
(+41°F to +95°F)
Operating humidity 5% to 85%
(no condensation)

Component video output

Y (luminance) - Output level 1 Vp-p (75 Ω)
 P_B (color) - Output level 0.7 Vp-p (75 Ω)
 P_R (color) - Output level 0.7 Vp-p (75 Ω)
Jack RCA

S-video output

Y (luminance) - Output level 1 Vp-p (75 Ω)
C (color) - Output level 286 mVp-p (75 Ω)
Jack S-video

Video output

Output level 1 Vp-p (75 Ω)
Jack RCA

Audio output (1 stereo pair)

Output level During audio output
200 mVrms (1 kHz, –20 dB)
Number of channels 2
Jacks RCA

Audio output (multi-channel / L, R, C, SW, LS, RS)

Output level During audio output
200 mVrms (1 kHz, –20 dB)
Number of channels 6
Jacks RCA jack

Digital audio characteristics

Frequency response 4 Hz to 44 kHz
(DVD fs: 96 kHz)
4 Hz to 88 kHz (DVD-Audio fs: 192 kHz)
S/N ratio 115 dB
Dynamic range 101 dB
Total harmonic distortion 0.0020 %
Wow and flutter Limit of measurement
(\pm 0.001% W, PEAK) or lower

Digital output

Coaxial digital output jack RCA jack
Optical digital output Optical digital jack

Accessories

Audio/video cable 1
Power cable
Others 1
DV-676A-S (RLF type only) 2
Remote control 1
AA/R6P dry cell batteries 2
Operating Instructions

Front panel button names sticker
(RLF type only) 1
Remote control overlay
(RLF type only) 1

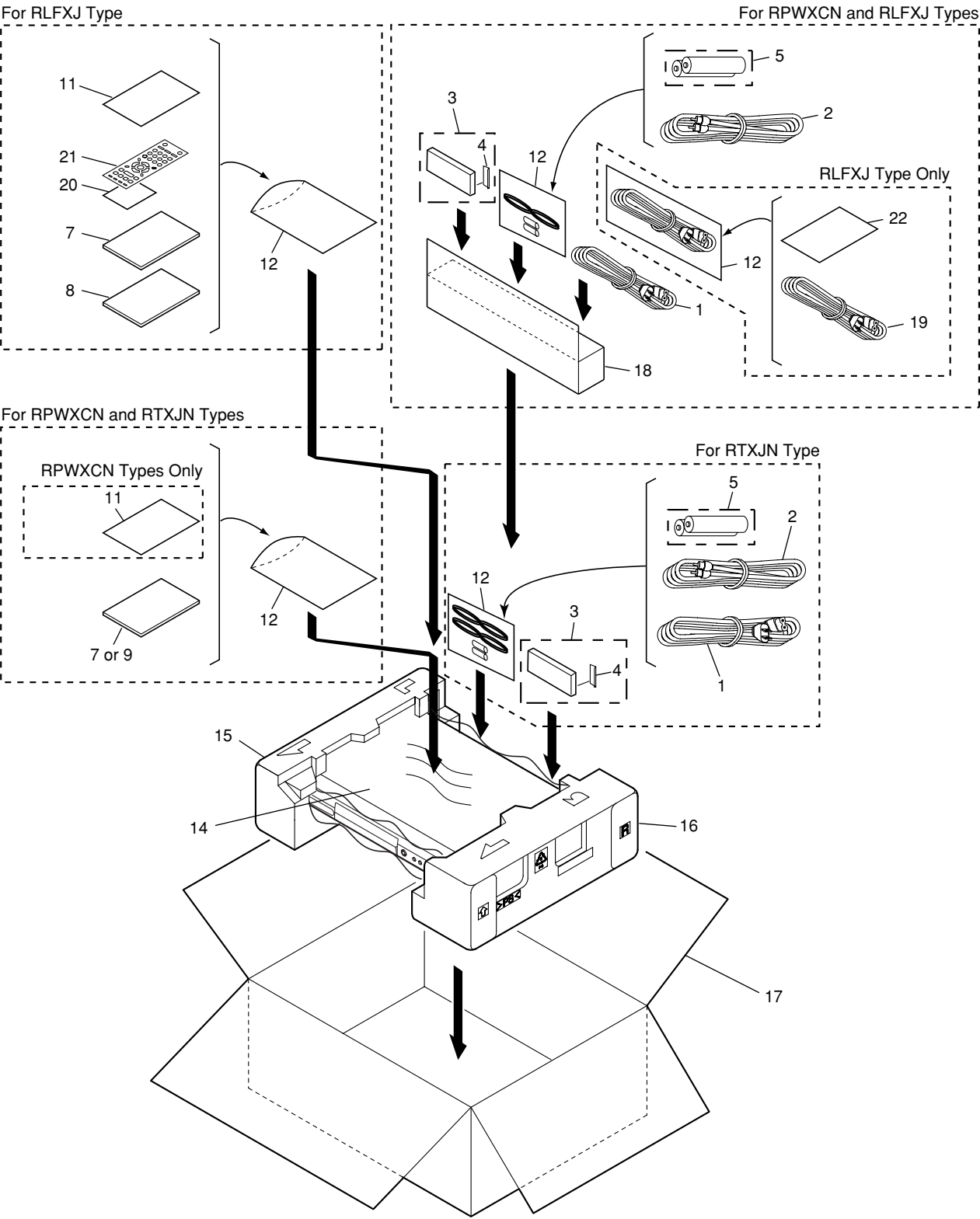
The specifications and design of this product are subject to change without notice, due to improvement.

1 2 3 4

2. EXPLODED VIEWS AND PARTS LIST

NOTES: ● Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
● The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
● Screws adjacent to ▼ mark on product are used for disassembly.
● For the applying amount of lubricants or glue, follow the instructions in this manual.
(In the case of no amount instructions, apply as you think it appropriate.)

2.1 PACKING



PACKING parts List

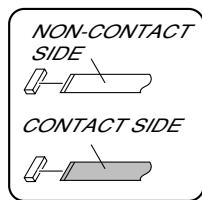
Mark No.	Description	Part No.	Mark No.	Description	Part No.
⚠ 1	Power Cable	See Contrast table(2)	13	
2	Audio/Video Cable	See Contrast table(2)	14	Polyethylene Bag	See Contrast table(2)
3	Remote Control	VXX2913	15	Pad L	See Contrast table(2)
4	Battery Cover	VNK4997			
NSP 5	Dry Cell Battery (AA,R6P)	See Contrast table(2)	16	Pad R	See Contrast table(2)
6		17	Packing Case	See Contrast table(2)
7	Operating Instructions (English)	See Contrast table(2)	⚠ 18	Accessory Box	See Contrast table(2)
8	Operating Instructions (Trad-Chinese)	See Contrast table(2)	19	Power Cable	See Contrast table(2)
9	Operating Instructions (Thai)	See Contrast table(2)	20	Front Panel Button Names Sticker	See Contrast table(2)
10		21	Remote Control Overlay	See Contrast table(2)
11	DivX Compatibility Sheet	See Contrast table(2)	22	Caution Card SB	See Contrast table(2)
12	Polyethylene bag B5	VHL1051			

(2) CONTRAST TABLE

DV-676A-S/RPWXCN, RLFXJ and RTXJN are constructed the same except for the following:

Mark	No.	Symbol and Description	DV-676A-S/RPWXCN	DV-676A-S/RLFXJ	DV-676A-S/RTXJN
⚠	1	Power cable	ADG7099	ADG1154	ADG1154
	2	Audio/Video Cable	VDE1078	XDE3049	XDE3049
NSP	5	Dry Cell Battery (AA,R6P)	VEM1010	VEM1031	VEM1031
	7	Operating Instructions (English)	VRB1331	VRB1331	Not used
	8	Operating Instructions (Trad-Chinese)	Not used	VRC1197	Not used
	9	Operating Instructions (Thai)	Not used	Not used	VRC1198
	11	DivX Compatibility Sheet	VRX1051	VRX1051	Not used
	14	Polyethylene Bag	VHL1076	VHL1077	VHL1077
	15	Pad L	VHA1358	VHA1360	VHA1362
	16	Pad R	VHA1359	VHA1361	VHA1363
	17	Packing Case	VHG2494	VHG2499	VHG2500
	18	Accessory Box	VHC1114	VHC1132	Not used
⚠	19	Power cable	Not used	ADG7097	Not used
	20	Front Panel Button Names Sticker	Not used	VRW2101	Not used
	21	Remote Control Overlay	Not used	VEC2406	Not used
	22	Caution Card SB	Not used	ARM7064	Not used

2.2 EXTERIOR SECTION



Refer to
"2.4 04 LOADER ASSY".

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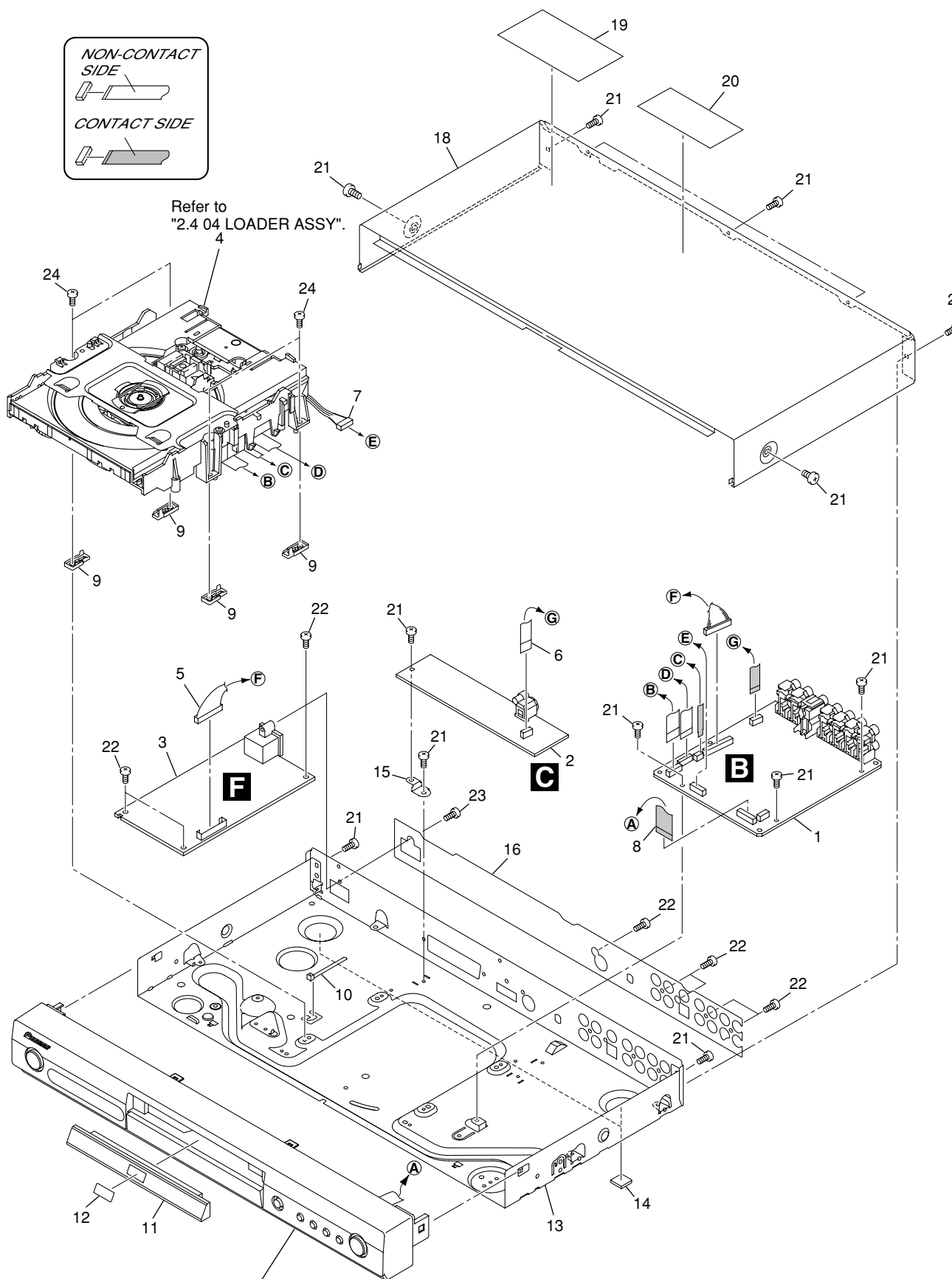
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Refer to "2.3 FRONT PANEL SECTION".

EXTERIOR SECTION parts List

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	DVDM Assy	VWS1596	14	Rubber Foot	VEB1349
2	JCKB Assy	VWV1994	15	PCB Base	See Contrast table(2)
⚠ 3	POWER SUPPLY Unit	VWR1377	16	Rear Sheet	See Contrast table(2)
NSP 4	04 LOADER Assy	VWT1210	17	•••••	
5	Connector Assy (13P)	See Contrast table(2)	18	Bonnet (or Bonnet S)	See Contrast table(2)
6	Flexible Cable (5P)	See Contrast table(2)	19	RLF label	VRW2127
7	Connector Assy (5P)	See Contrast table(2)	20	Caution Label	See Contrast table(2)
8	Flexible Cable (15P)	See Contrast table(2)	21	Screw	BBZ30P060FNI
9	Adapter 2	VNL1967	22	Screw	See Contrast table(2)
10	Binder	See Contrast table(2)	23	Screw	PPZ30P080FNI
11	Tray Panel	VNK5411	24	Screw	BBZ30P100FNI
12	DVD A/V Badge	VAM1131			
NSP 13	Base Chassis	See Contrast table(2)			

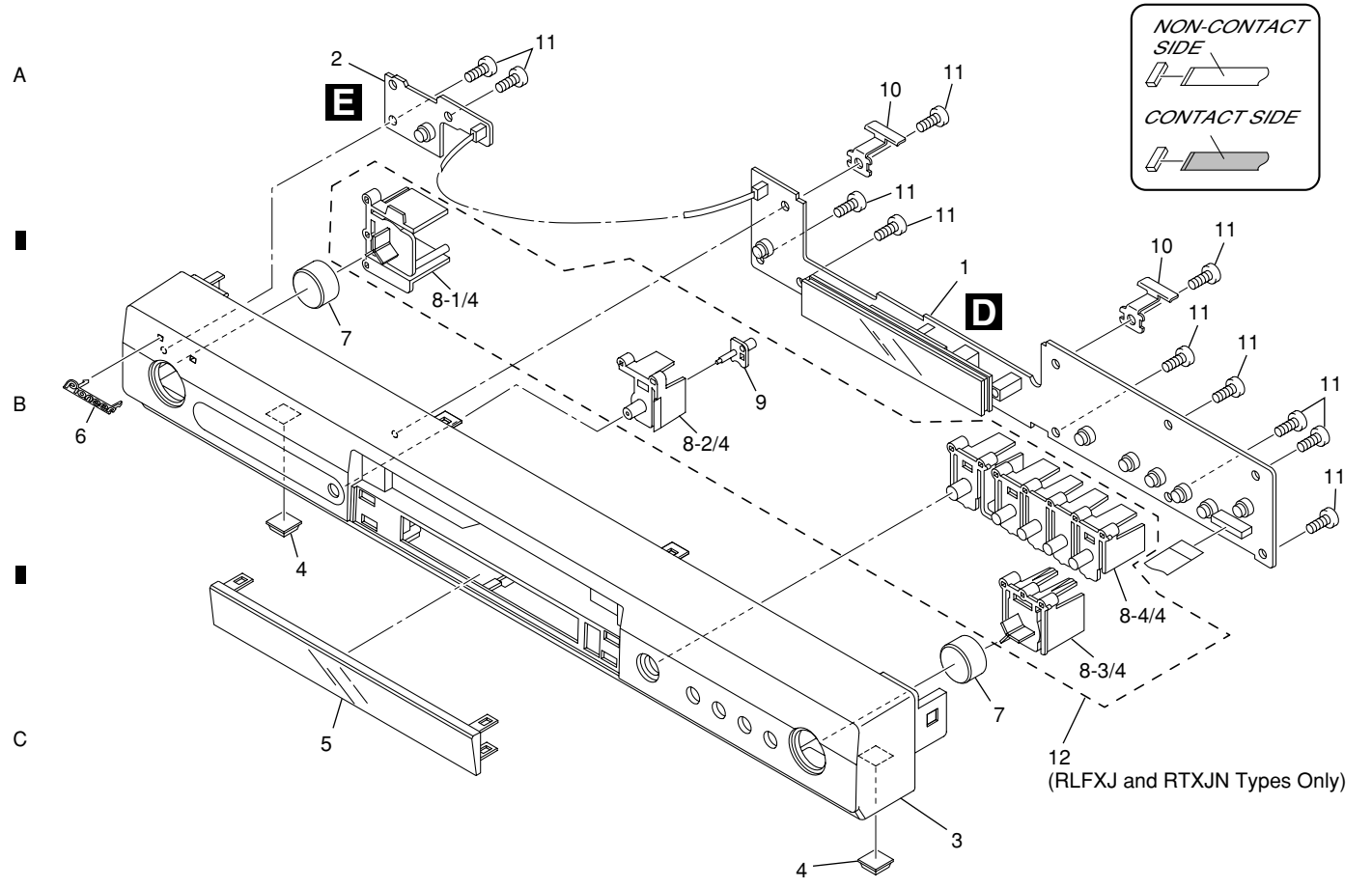
(2) CONTRAST TABLE

DV-676A-S/RPWXC�N, RLFxJ and RTXJN are constructed the same except for the following:

Mark	No.	Symbol and Description	DV-676A-S/RPWXC�N	DV-676A-S/RLFxJ	DV-676A-S/RTXJN
NSP	5	Connector Assy (13P)	VKP2320	PF13PP-C30	PF13PP-C30
	6	Flexible Cable (5P)	VDA1995	VDA1996	VDA1996
	7	Connector Assy (5P)	VKP2324	VKP2304	VKP2304
	8	Flexible Cable (15P)	VDA1991	VDA2009	VDA2009
	10	Binder	VEC2414	VEC2427	VEC2427
	13	Base Chassis	VNA2703	VNA2718	VNA2726
	15	PCB Base	VNE2279	VNE2277	VNE2277
	16	Rear Sheet	VRW2079	VRW2102	VRW2103
	18	Bonnet (or Bonnet S)	VNA2677	VXX2943	VXX2943
	20	Caution Label	VRW1872	VRW1961	VRW1872
	22	Screw	BBZ30P080FNI	BBZ30P080FCC	BBZ30P080FCC

1 2 3 4

2.3 FRONT PANEL SECTION



FRONT PANEL SECTION parts List

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	FLKY Assy	See Contrast table(2)	7	Key Top	VNK5407
2	PWSB Assy	VWG2482	8	Main Key	VNK5404
3	Front Panel	VNK5531	9	LED Lens	VNK5415
4	Rubber Foot	VEB1349	10	FP Angle	VNE2332
5	FL Lens	VNK5414			
			11	Screw	PPZ30P080FNI
6	Pioneer Name Plate	VAM1129	12	Main Key Assy	See Contrast table(2)

(2) CONTRAST TABLE

DV-676A-S/RPWXCN, RLFXJ and RTXJN are constructed the same except for the following:

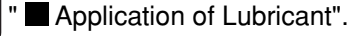
Mark	No.	Symbol and Description	DV-676A-S/RPWXCN	DV-676A-S/RLFXJ	DV-676A-S/RTXJN
	1	FLKY Assy	VWG2486	VWG2486	VWG2512
	12	Main Key Assy	Not used	VXA2667	VXA2667

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Lubricating Oil
GYA1001

Lubricating Oil
GYA1001

E

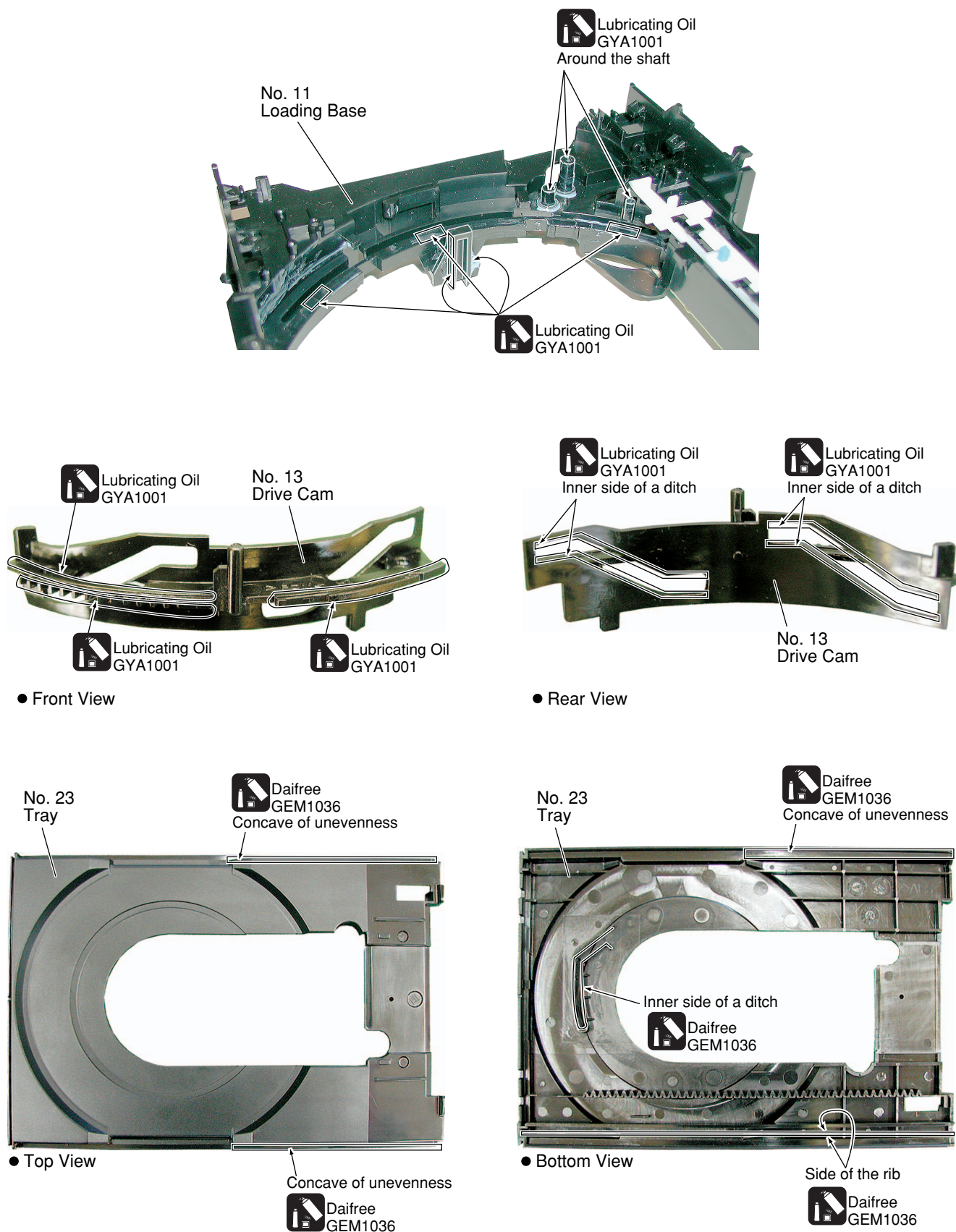
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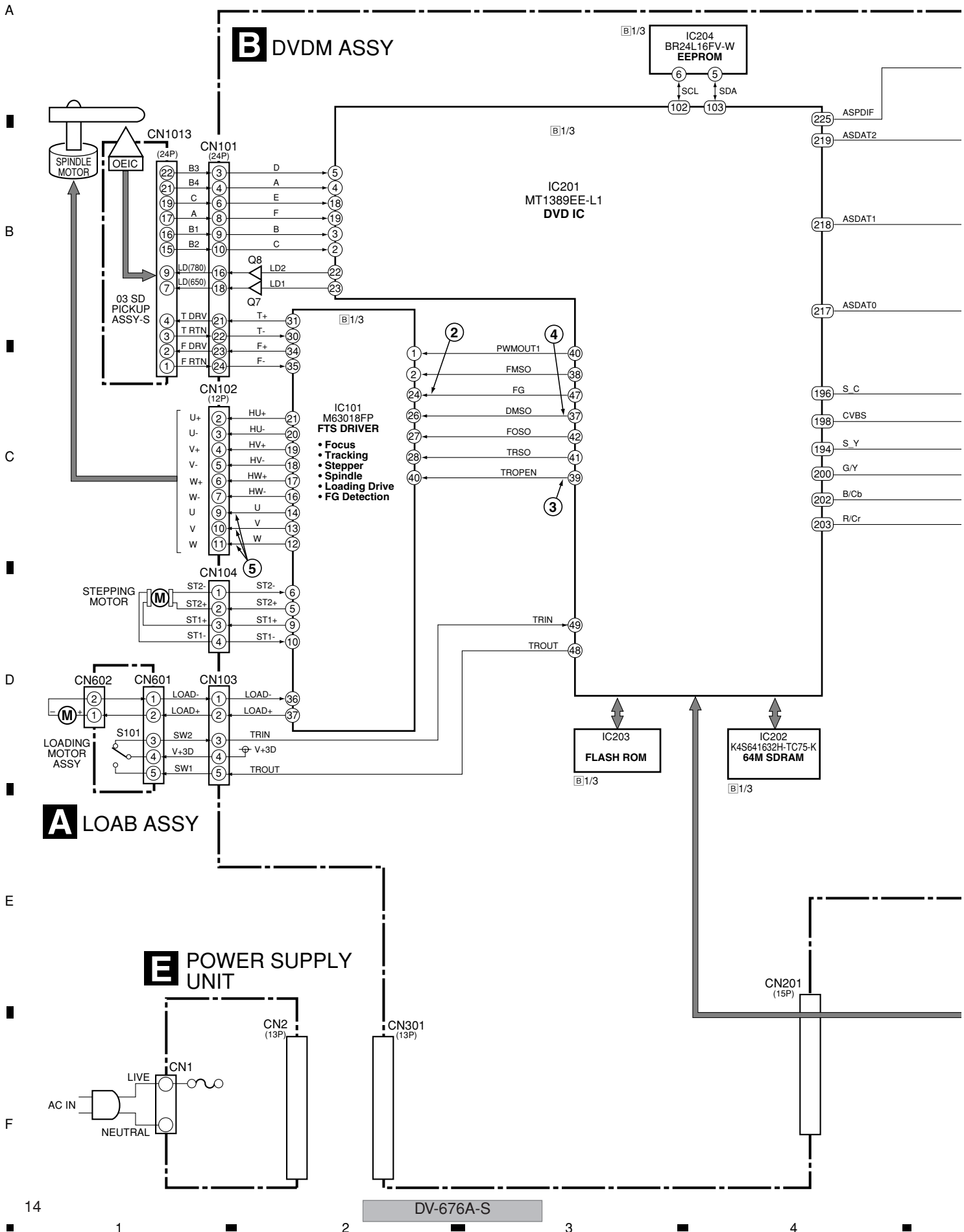
Application of Lubricant

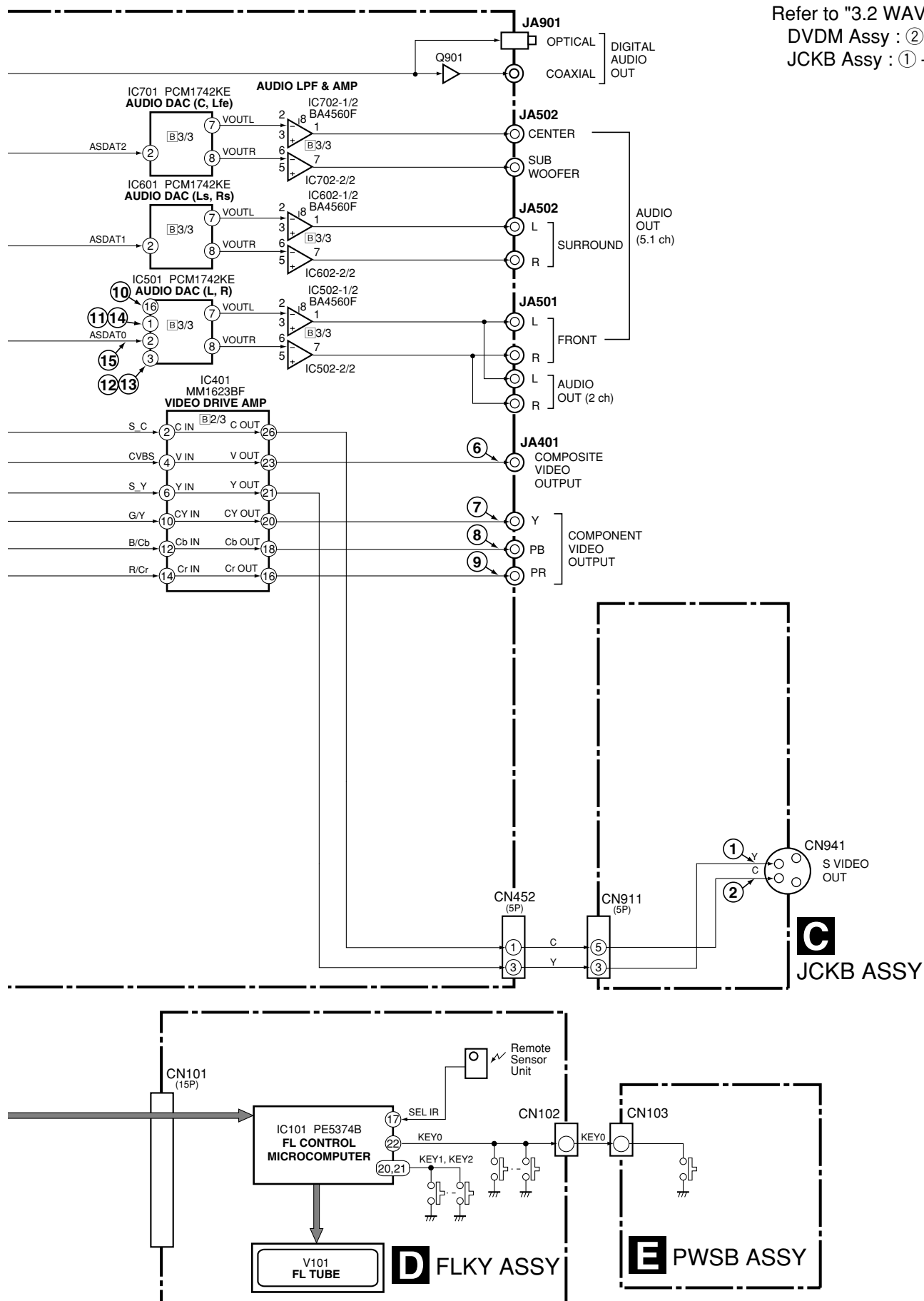


3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

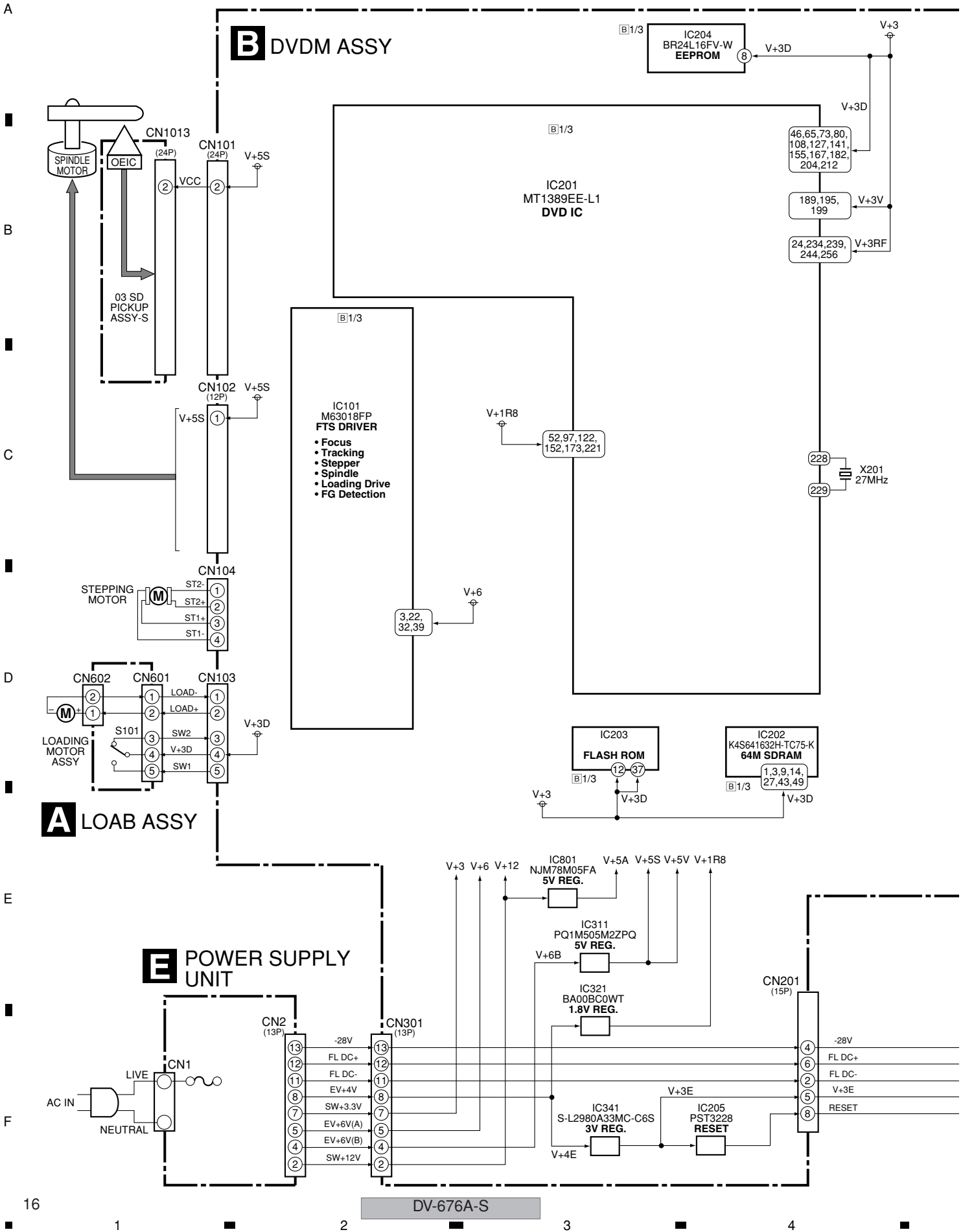
3.1.1 SIGNAL ROUTE BLOCK DIAGRAM

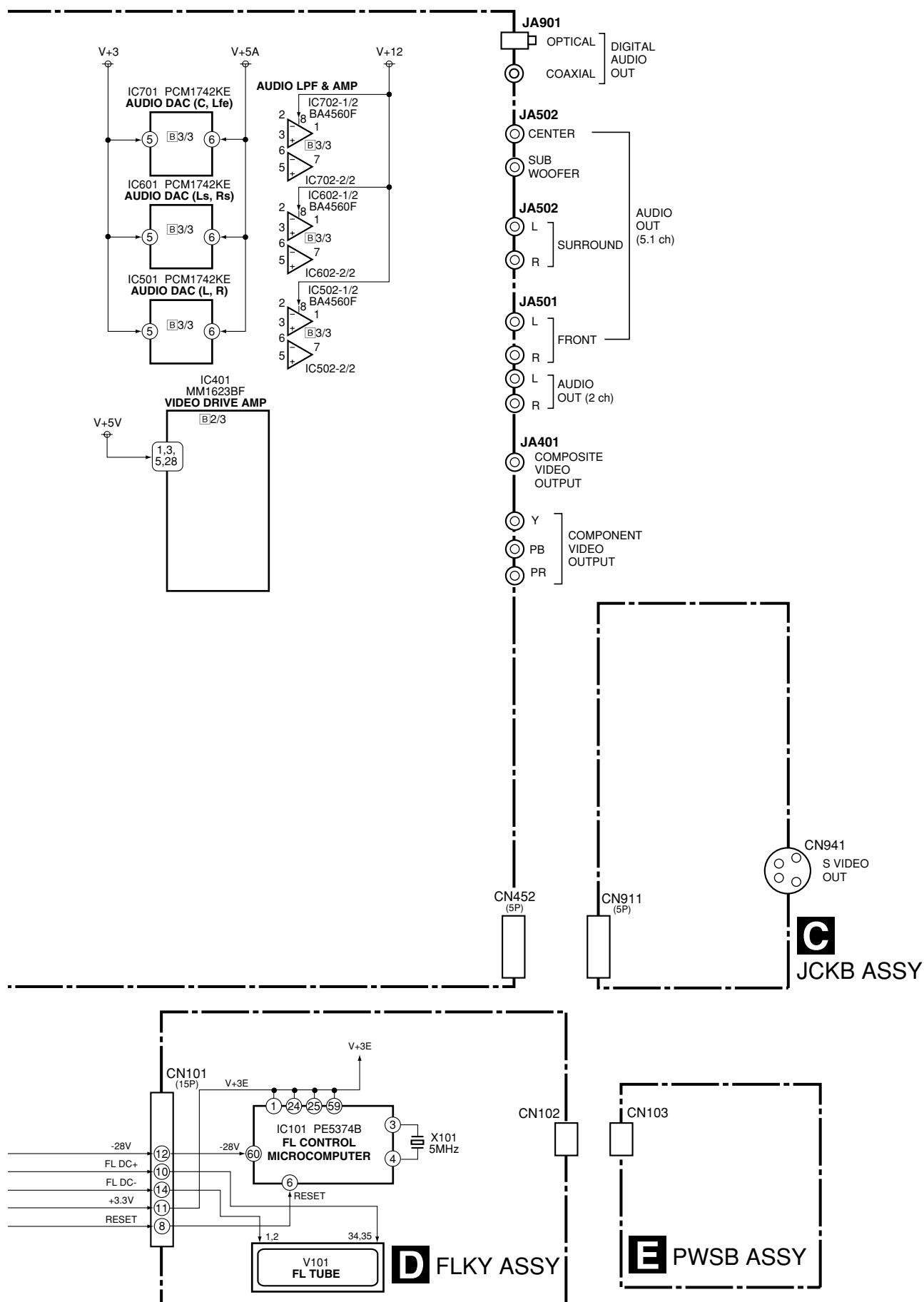


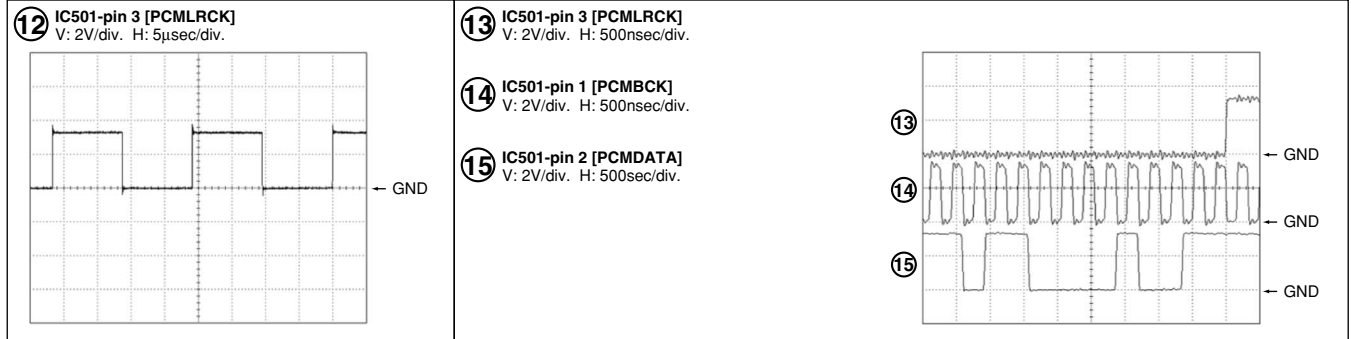


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3.1.2 POWER SUPPLY BLOCK DIAGRAM

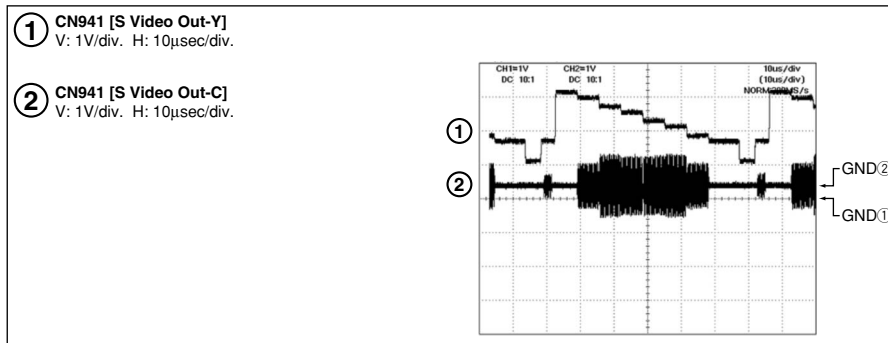




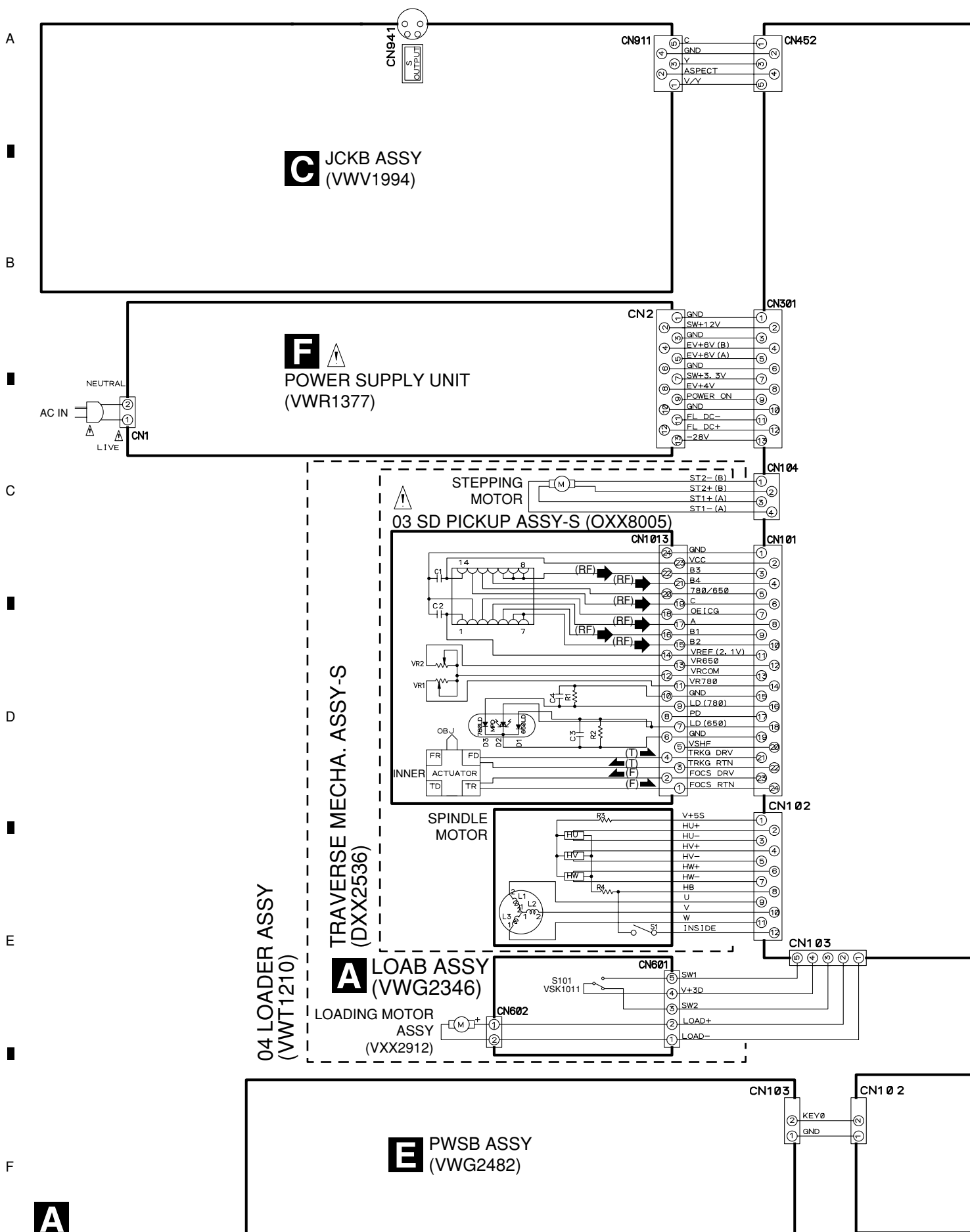




C JCKB ASSY




Measurement condition :
reference A1 (DVD), T2-chp 19, Color-bar

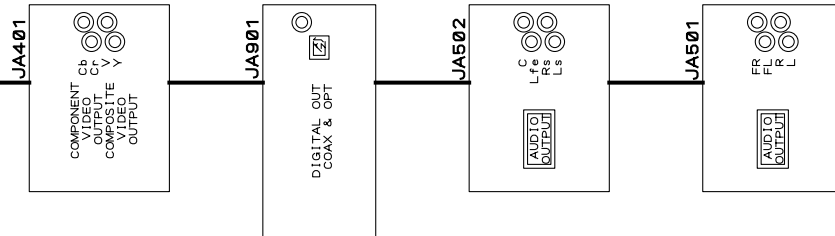


3.3 LOAB ASSY and OVERALL WIRING DIAGRAM



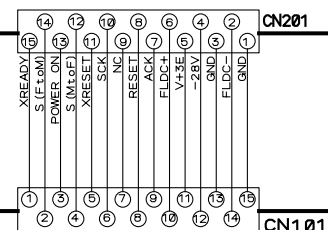
- When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".
- The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
-  : The power supply is shown with the marked box.

(RF) : RF SIGNAL ROUTE
(F) : FOCUS SERVO LOOP LINE
(T) : TRACKING SERVO LOOP LINE



B DVDM ASSY
(VWS1596)

(
B 1/3 : DVD IC BLOCK
B 2/3 : POWER and VIDEO BLOCK
B 3/3 : AUDIO BLOCK
)



D FLKY ASSY
(RPWXCN and RLFXJ types : VWG2486)
(RTXJN type : VWG2512)

3.4 DVDM ASSY (1/3)

B 1/3 DVDM ASSY (VWS1596)

A

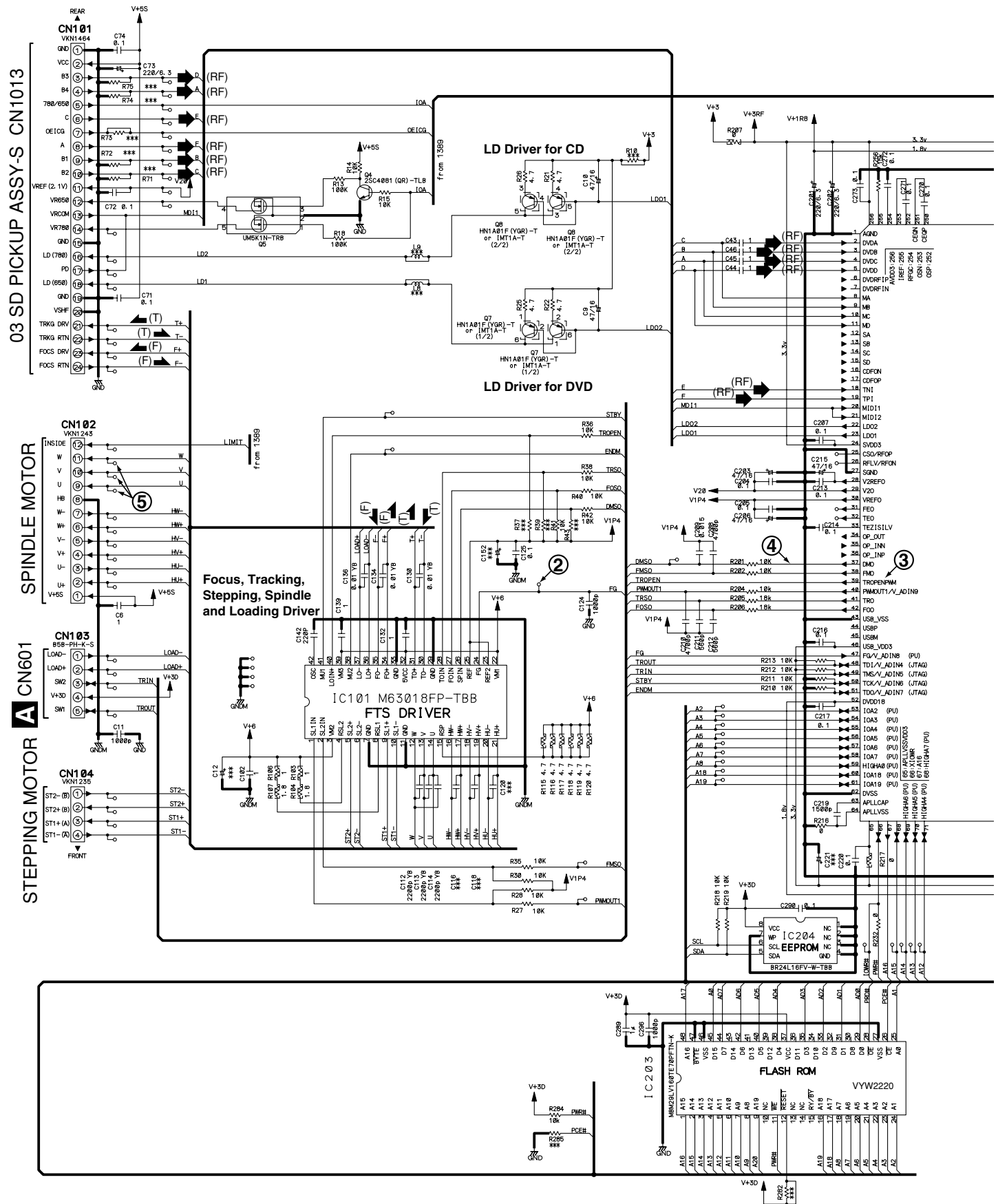
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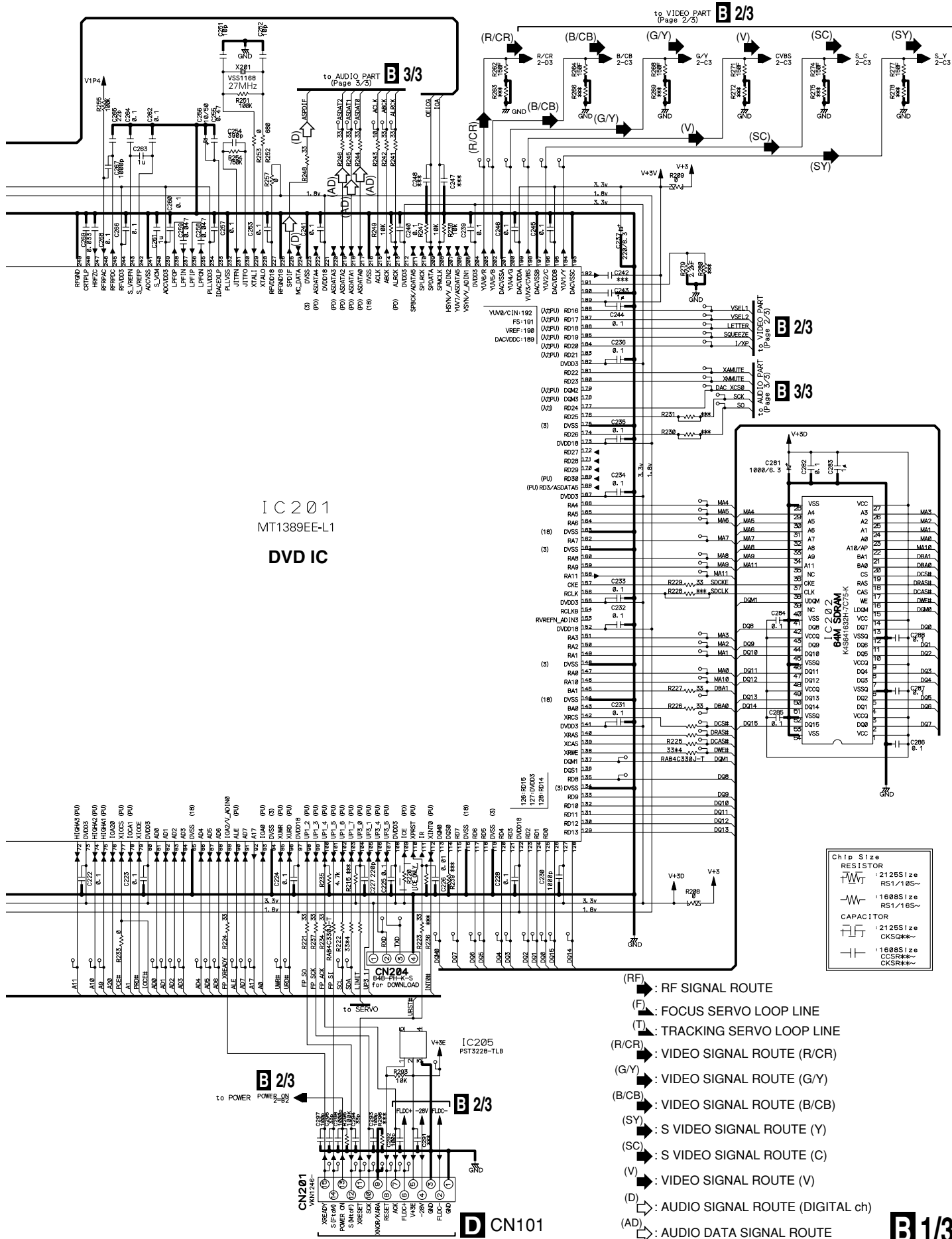
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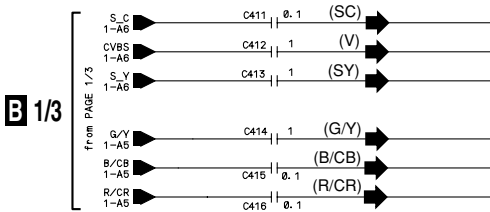
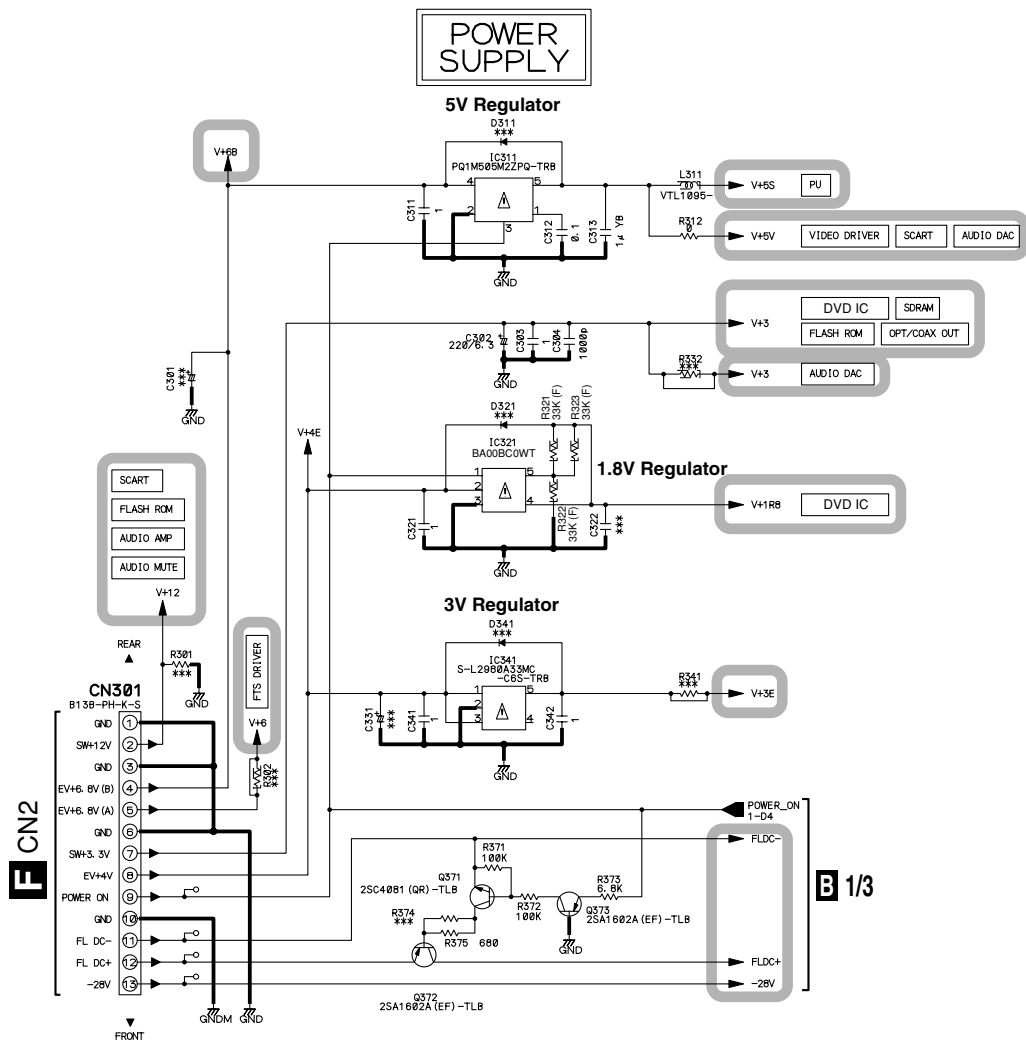


B 1/3



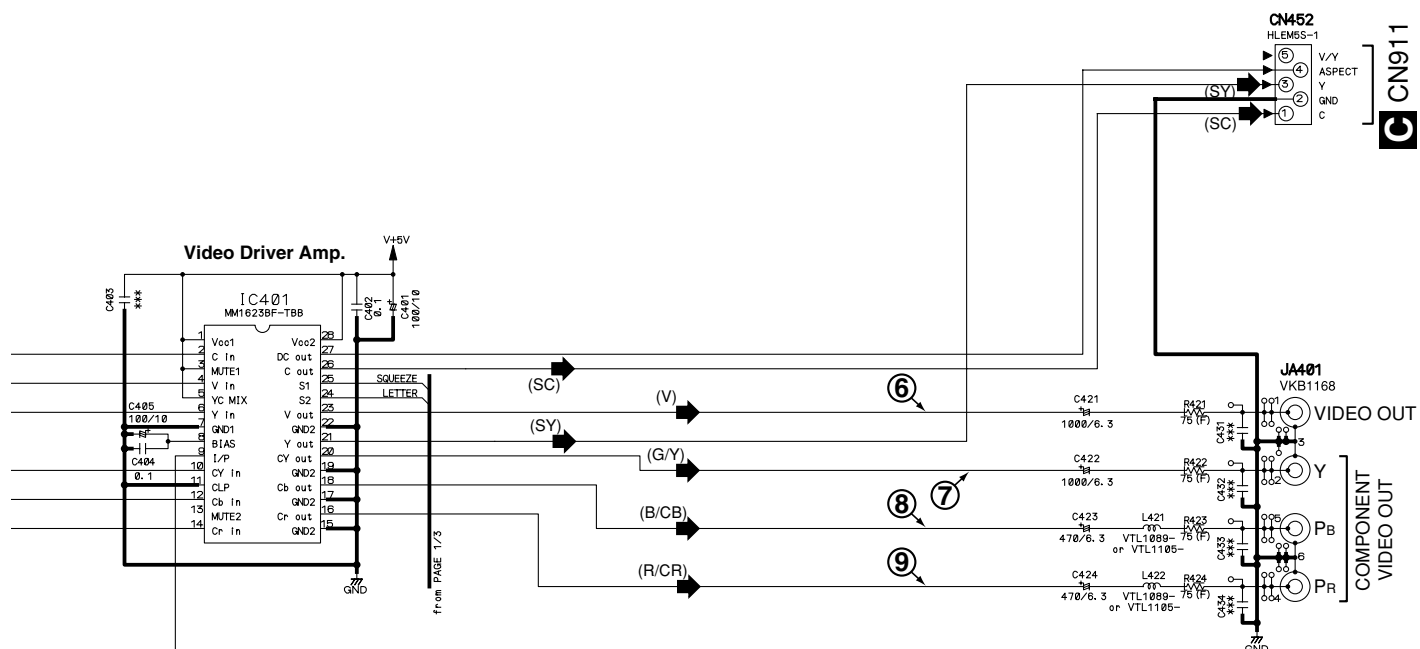
3.5 DVDM ASSY (2/3)

B 2/3 DVDM ASSY (VWS1596)



VIDEO

(R/CR) ➡ VIDEO SIGNAL ROUTE (R/CR)
 (G/Y) ➡ VIDEO SIGNAL ROUTE (G/Y)
 (B/CB) ➡ VIDEO SIGNAL ROUTE (B/CB)
 (SY) ➡ S VIDEO SIGNAL ROUTE (Y)
 (SC) ➡ S VIDEO SIGNAL ROUTE (C)
 (V) ➡ VIDEO SIGNAL ROUTE (V)



3.6 DVDM ASSY (3/3)

B 3/3 DVDM ASSY (VWS1596)

A

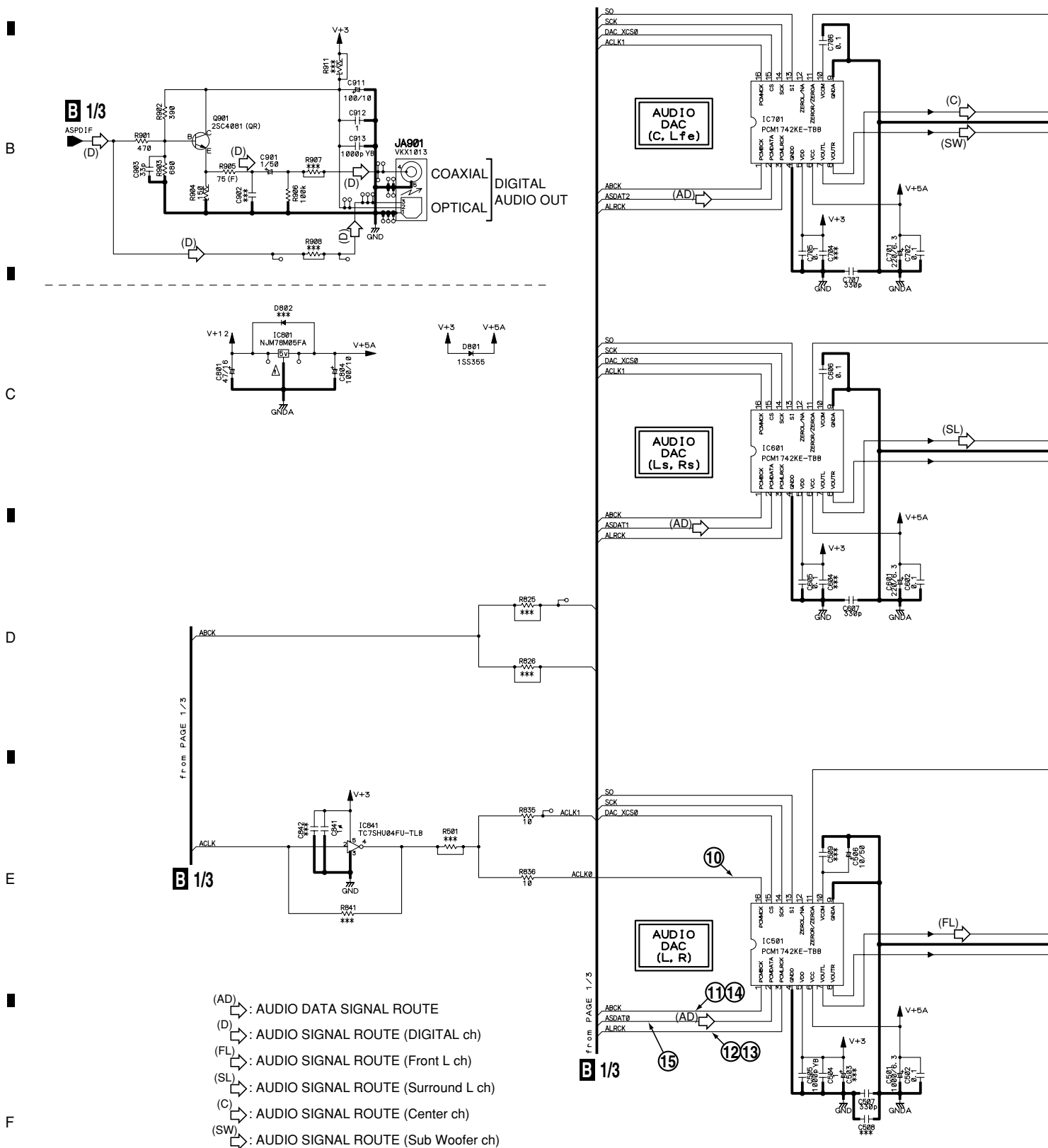
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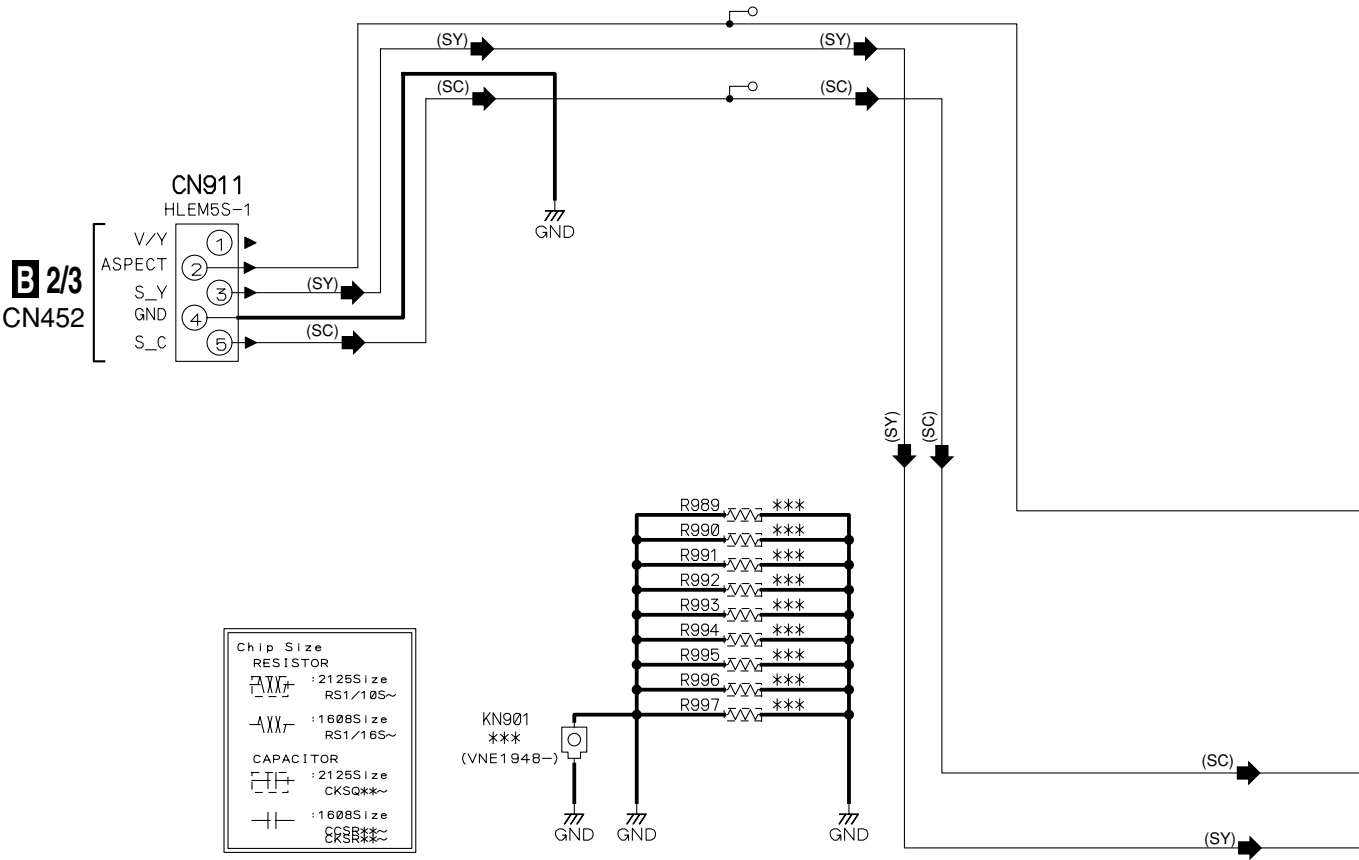
B 3/3

AUDIO OUT (5.1 ch)

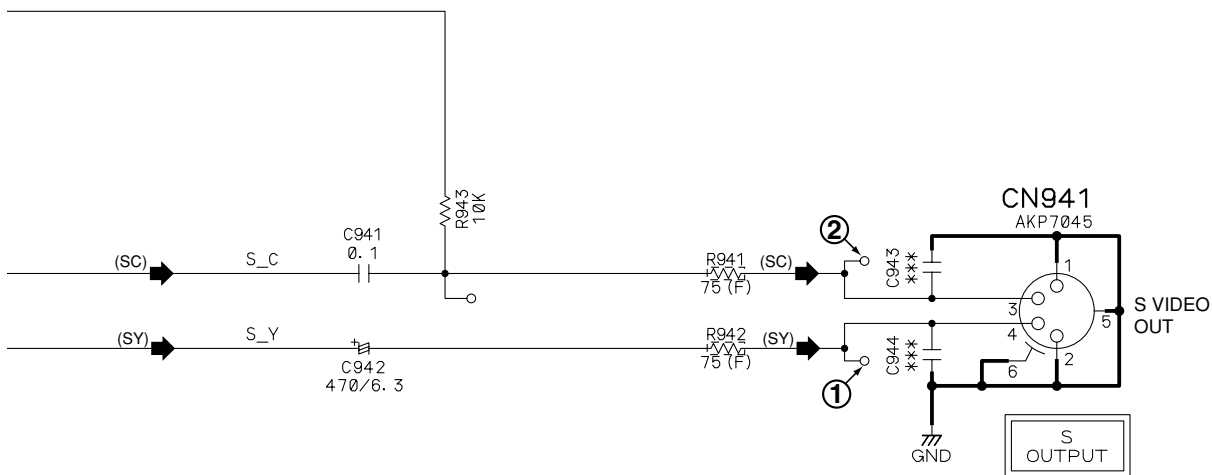
1 2 3 4

3.7 JCKB ASSY

C JCKB ASSY (VWV1994)



(SY) → : S VIDEO SIGNAL ROUTE (Y)
 (SC) → : S VIDEO SIGNAL ROUTE (C)



3.8 FLKY and PWSB ASSYS

D FLKY ASSY (RPWXCN and RLFXJ types : VWG2486)
(RTXJN type : VWG2512)

A

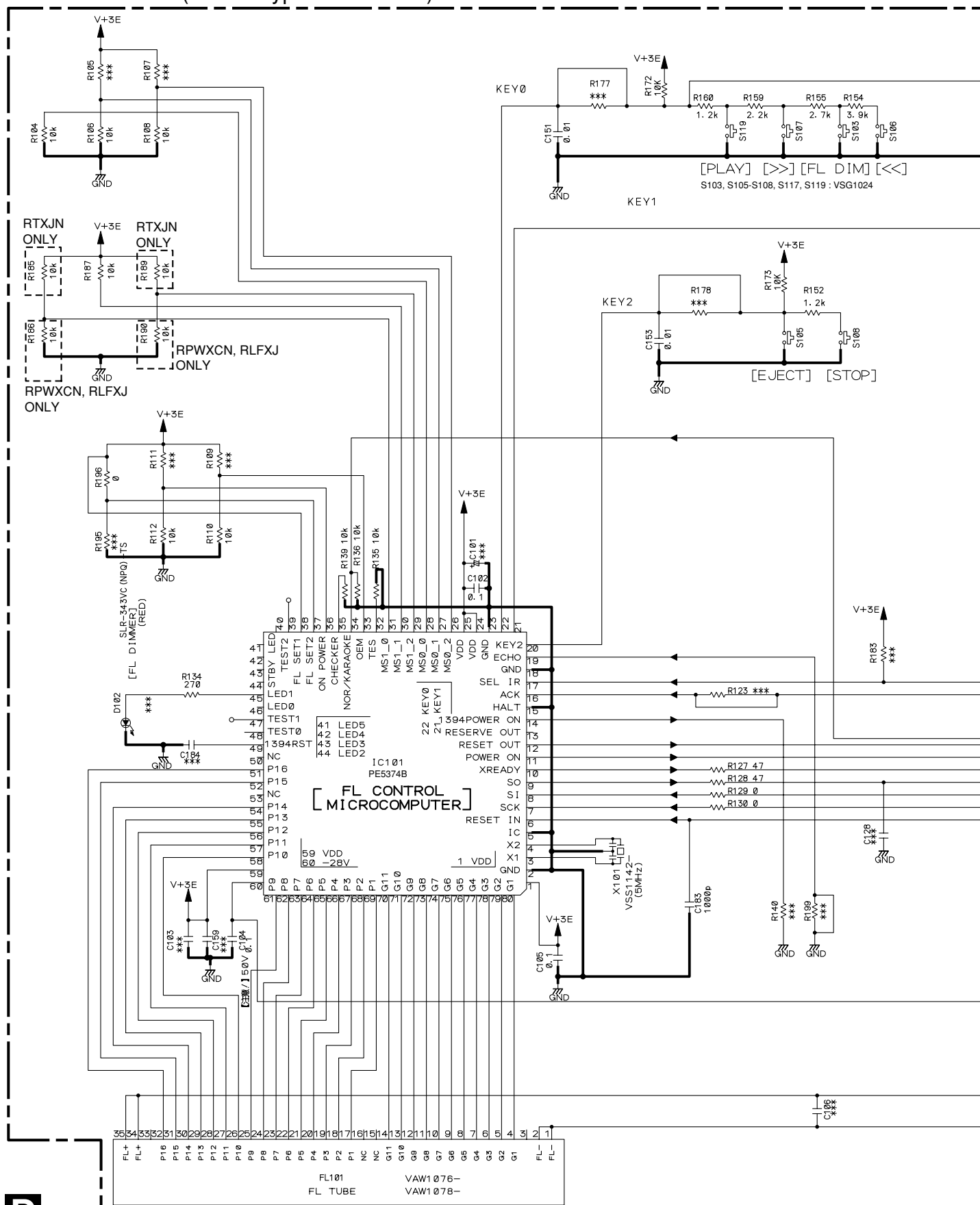
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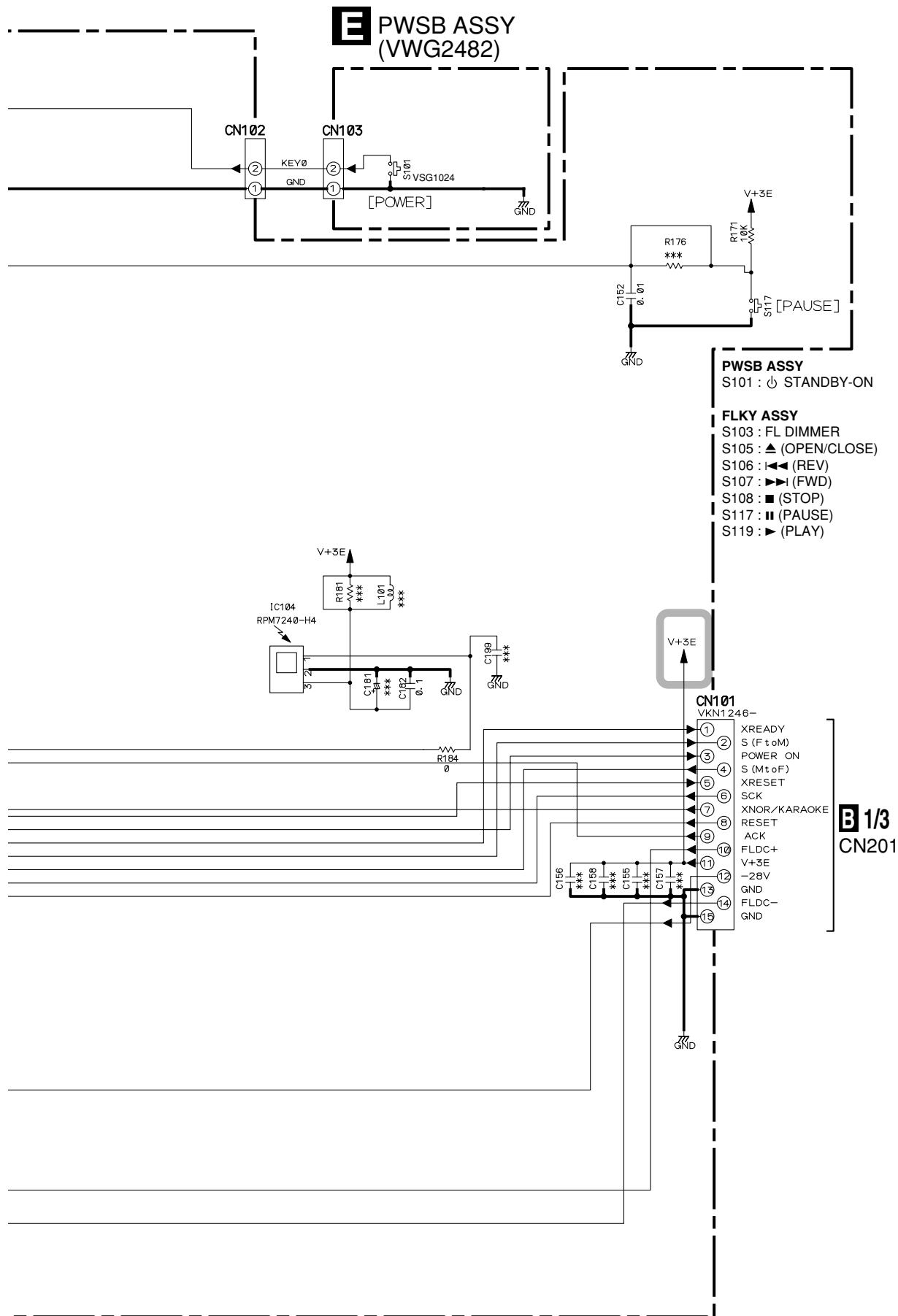
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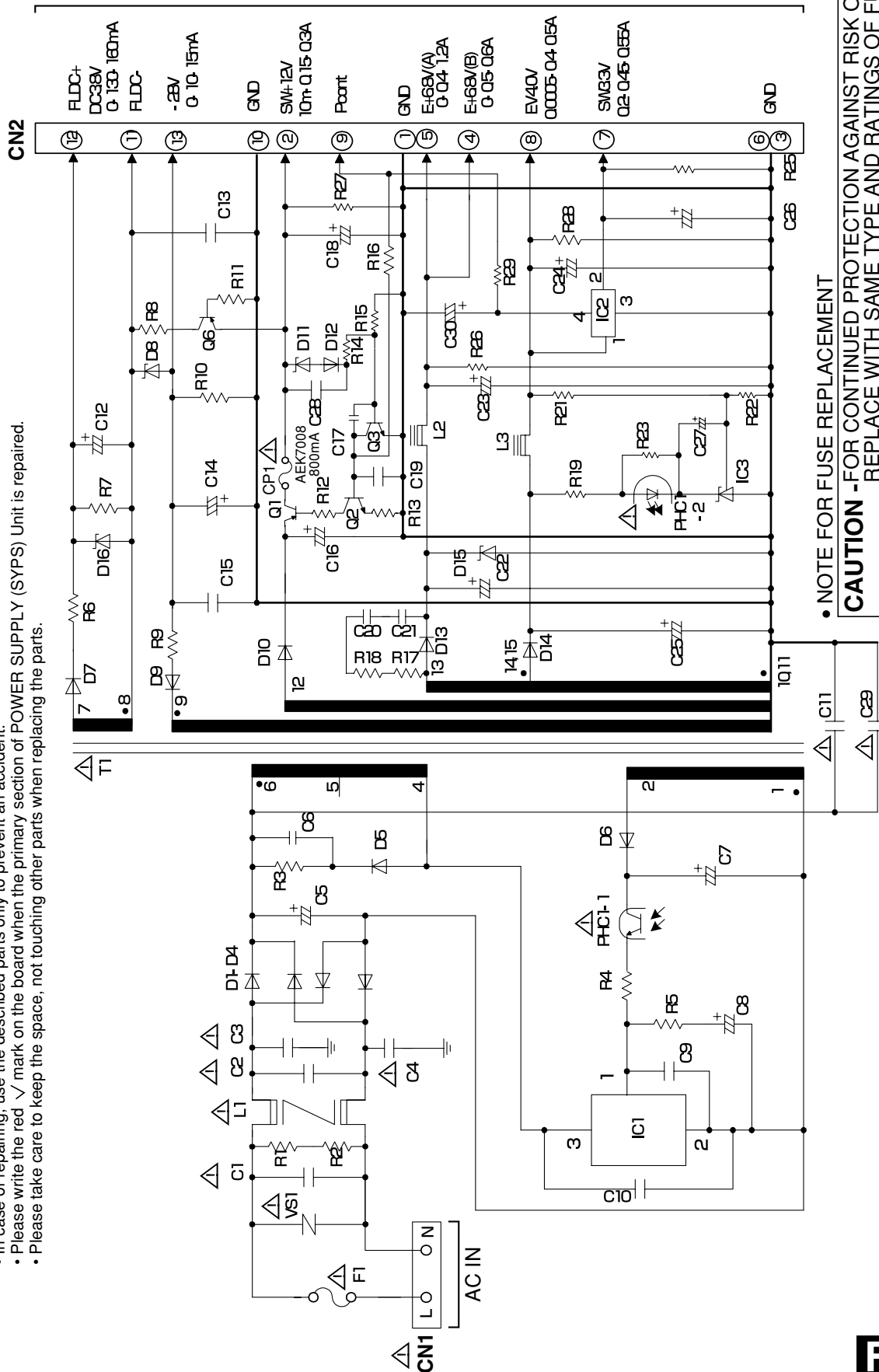
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» NOTE OF SPARE PARTS IN POWER SUPPLY (SYPS) UNIT «

- In case of repairing, use the described parts only to prevent an accident.
- Please write the red ✓ mark on the board when the primary section of POWER SUPPLY (SYPS) Unit is repaired.
- Please take care to keep the space, not touching other parts when replacing the parts.



• NOTE FOR FUSE REPLACEMENT

CAUTION - FOR CONTINUED PROTECTION AGAINST RISK OF FIRE.
REPLACE WITH SAME TYPE AND RATINGS OF FUSE.

4. PCB CONNECTION DIAGRAM

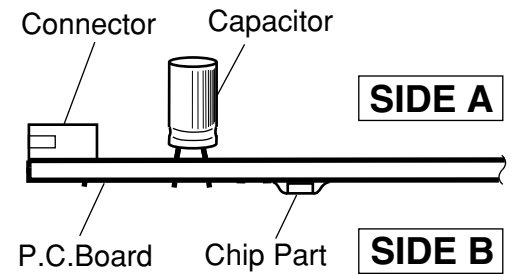
4.1 LOAB ASSY

NOTE FOR PCB DIAGRAMS :

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
		Transistor
		Transistor with resistor
		Field effect transistor
		Resistor array
		3-terminal regulator

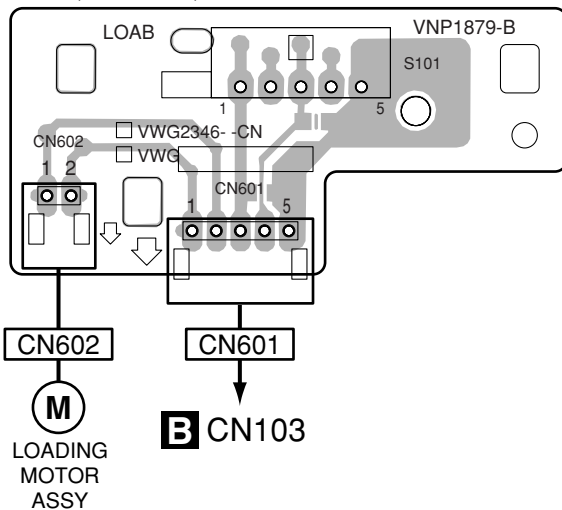
3. The parts mounted on this PCB include all necessary parts for several destinations.
- For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.



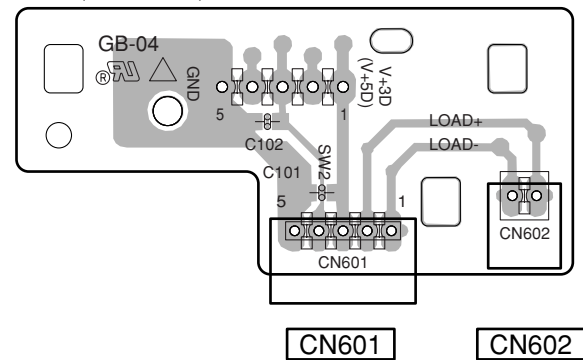
SIDE A

SIDE B

A LOAB ASSY (VNP1879-B)



A LOAB ASSY (VNP1879-B)



A

A

4

A

B

C

D

E

F

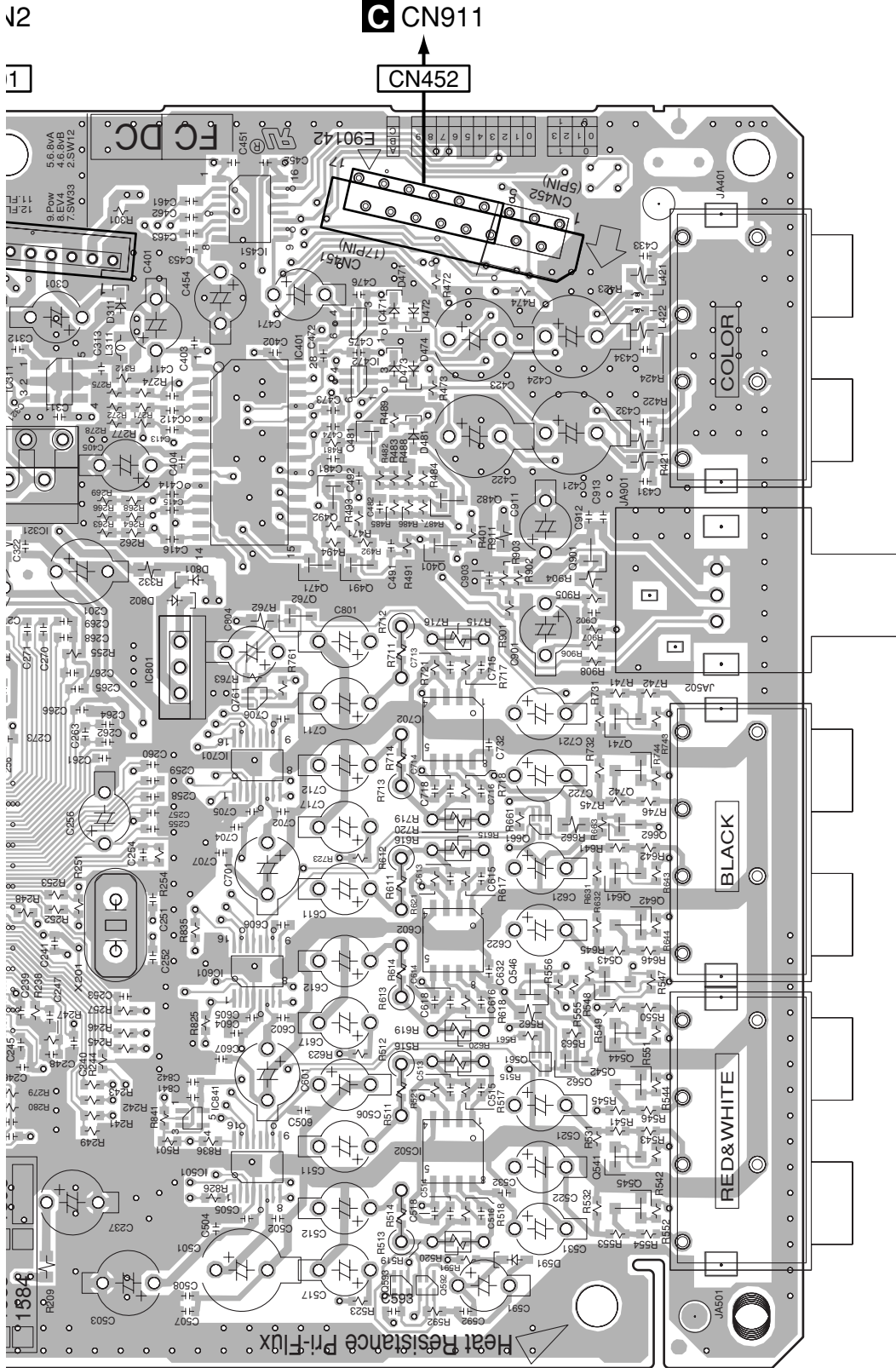
1

2

3

4





IC311	IC451	IC471	Q482	Q661	Q901	Q741
IC321	IC801	IC401	Q401	Q546	Q742	Q662
	IC841	Q761	Q481		Q561	Q562
		IC701	Q492		Q641	Q642
		IC601	Q471		Q541	Q542
		IC501	Q762		Q543	Q544
			Q593		Q545	Q546
			Q592			

SIDE B

A

B

C

D

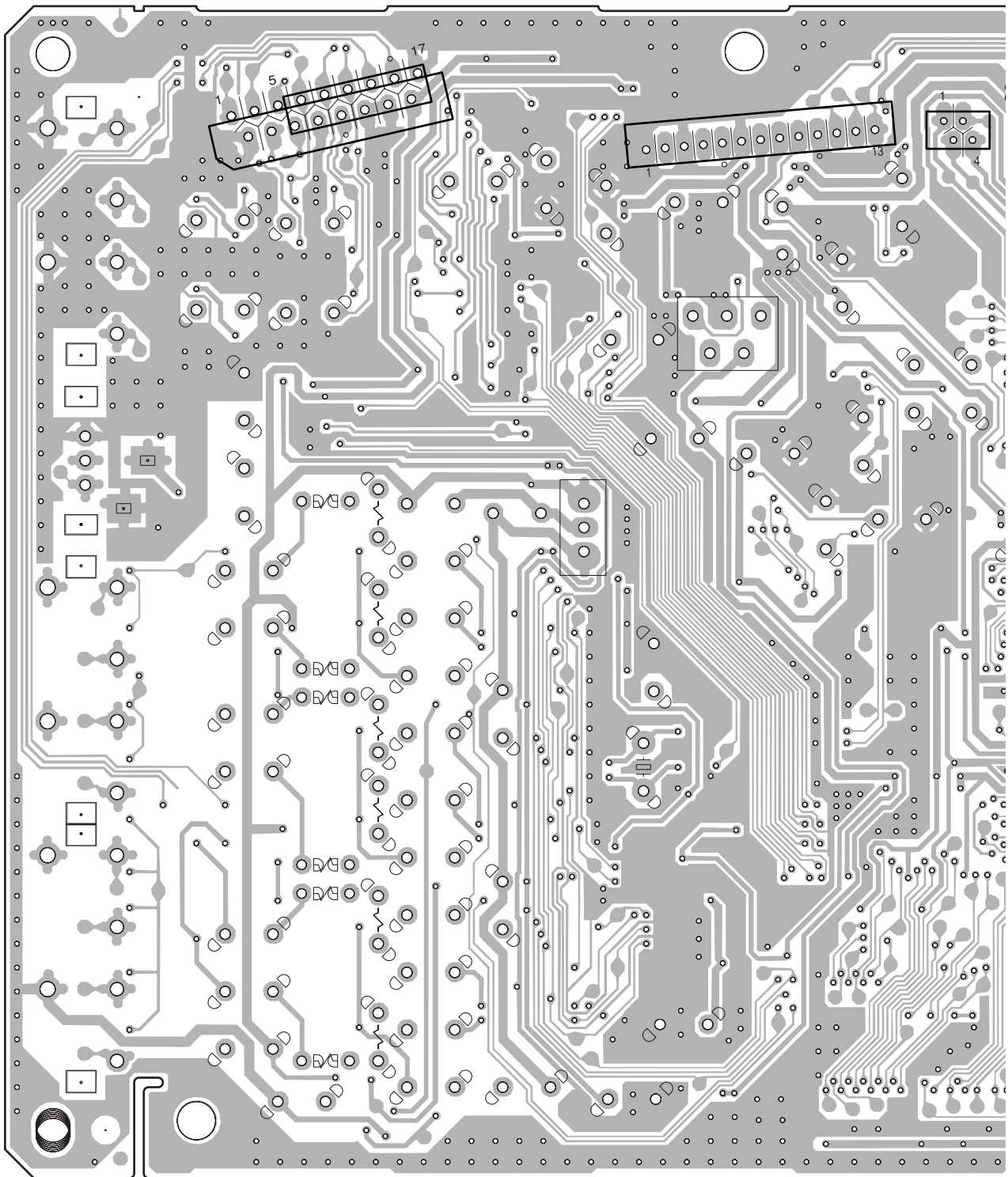
E

F

CN452

CN301

CN104



B

SIDE B

A

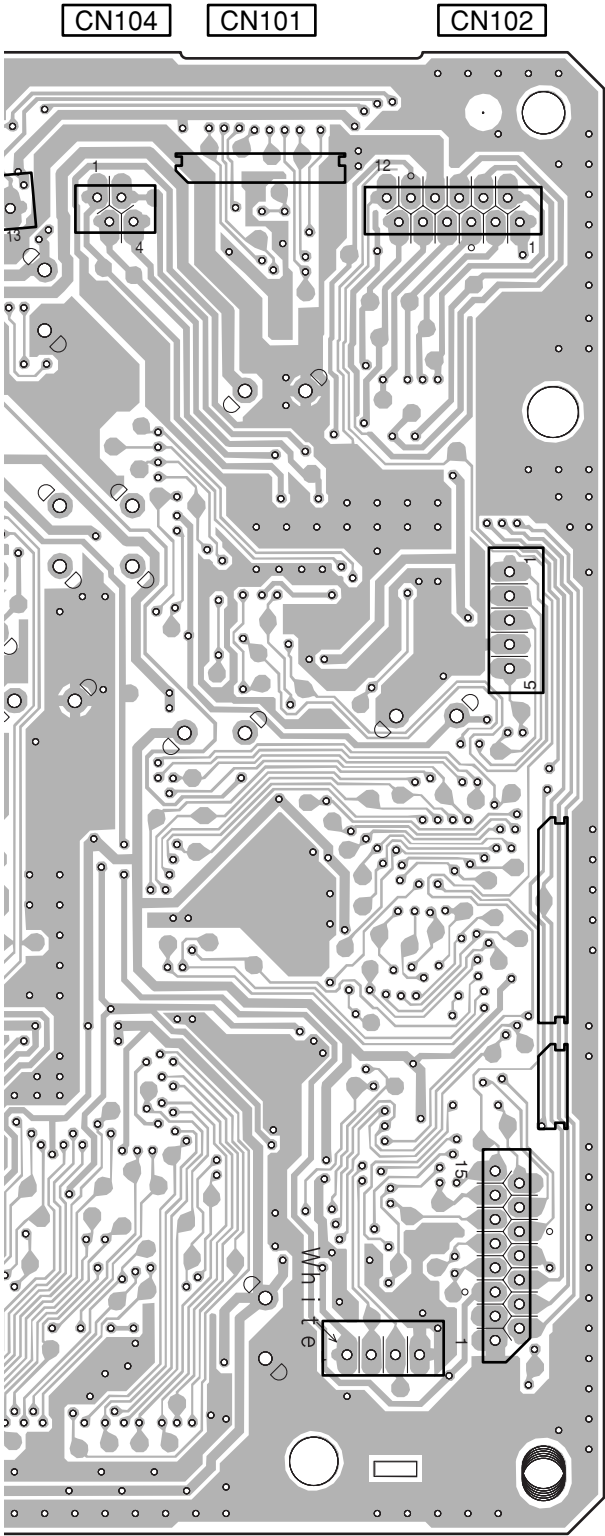
B

C

D

E

F



B DVDM ASSY
(VNP1966-D)

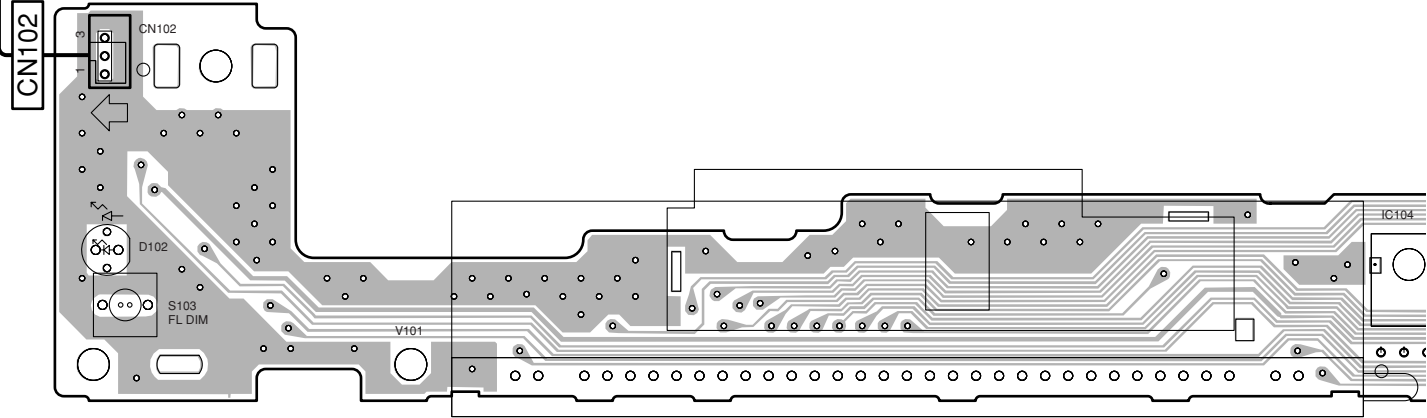
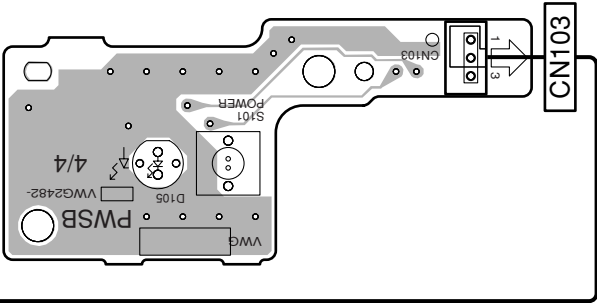
CN103

CN201

4.3 FLKY and PWSB ASSYS

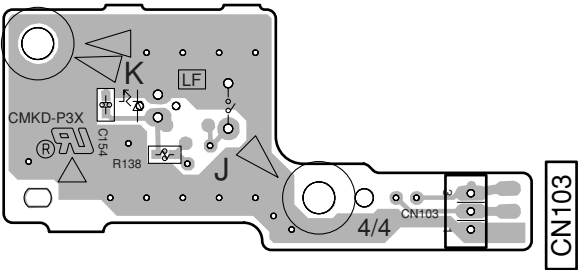
SIDE A

E
PWSB ASSY
(VNP1956-B)



SIDE B

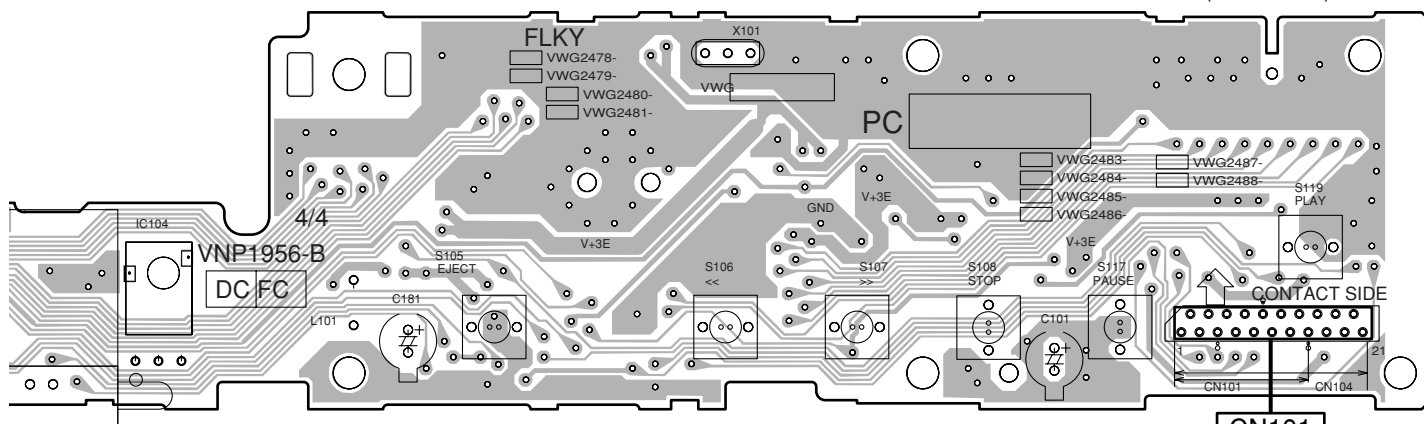
E
PWSB ASSY
(VNP1956-B)



D **E**

SIDE A

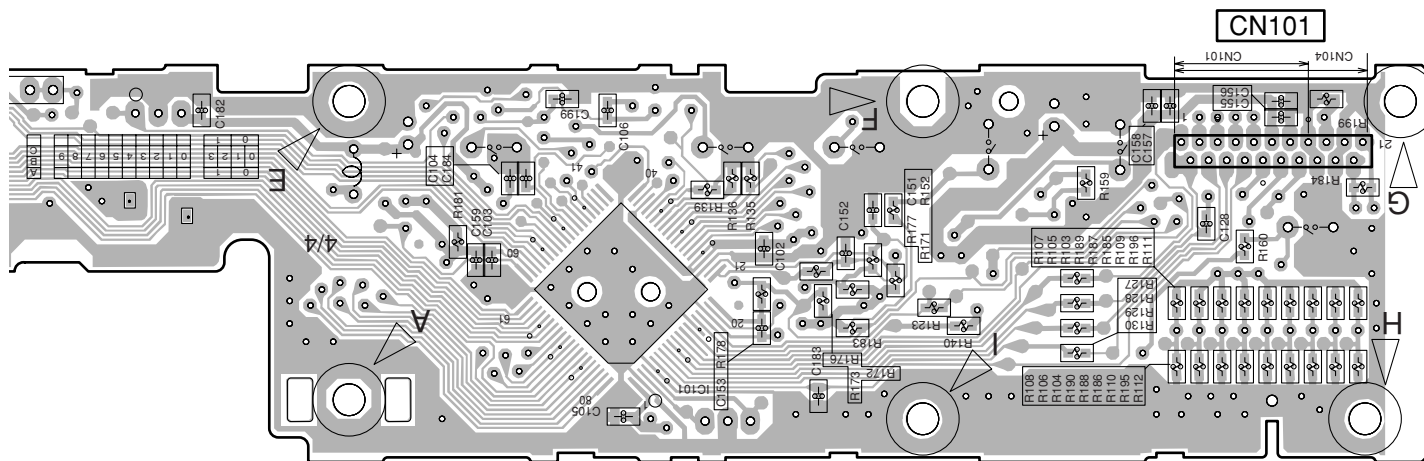
A

D FLKY ASSY
(VNP1956-B)

B

C

CN101

B CN201**SIDE B**

D

G

H

E

D FLKY ASSY
(VNP1956-B)

F

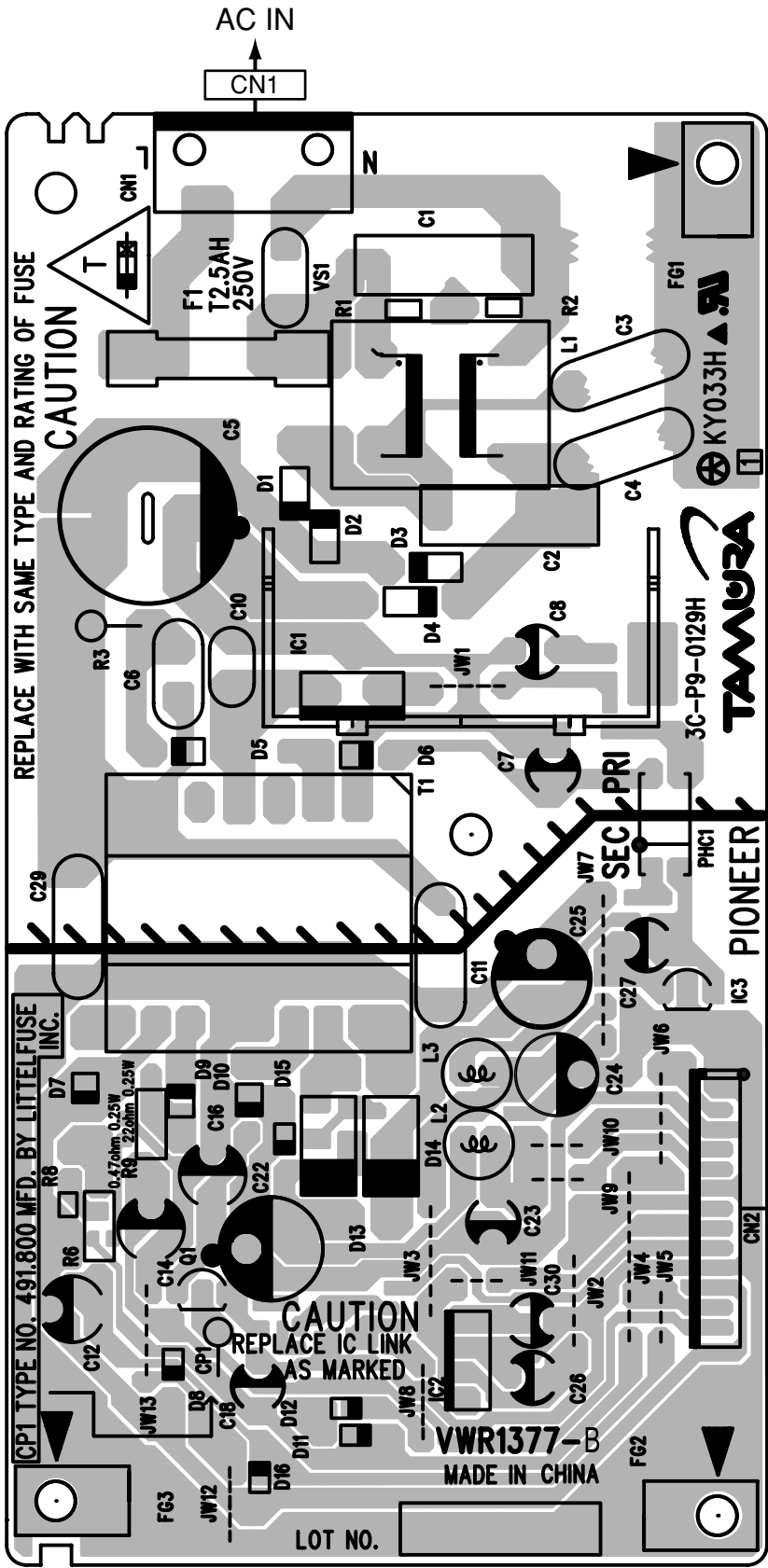
D

4.4 POWER SUPPLY UNIT

SIDE A

SIDE A

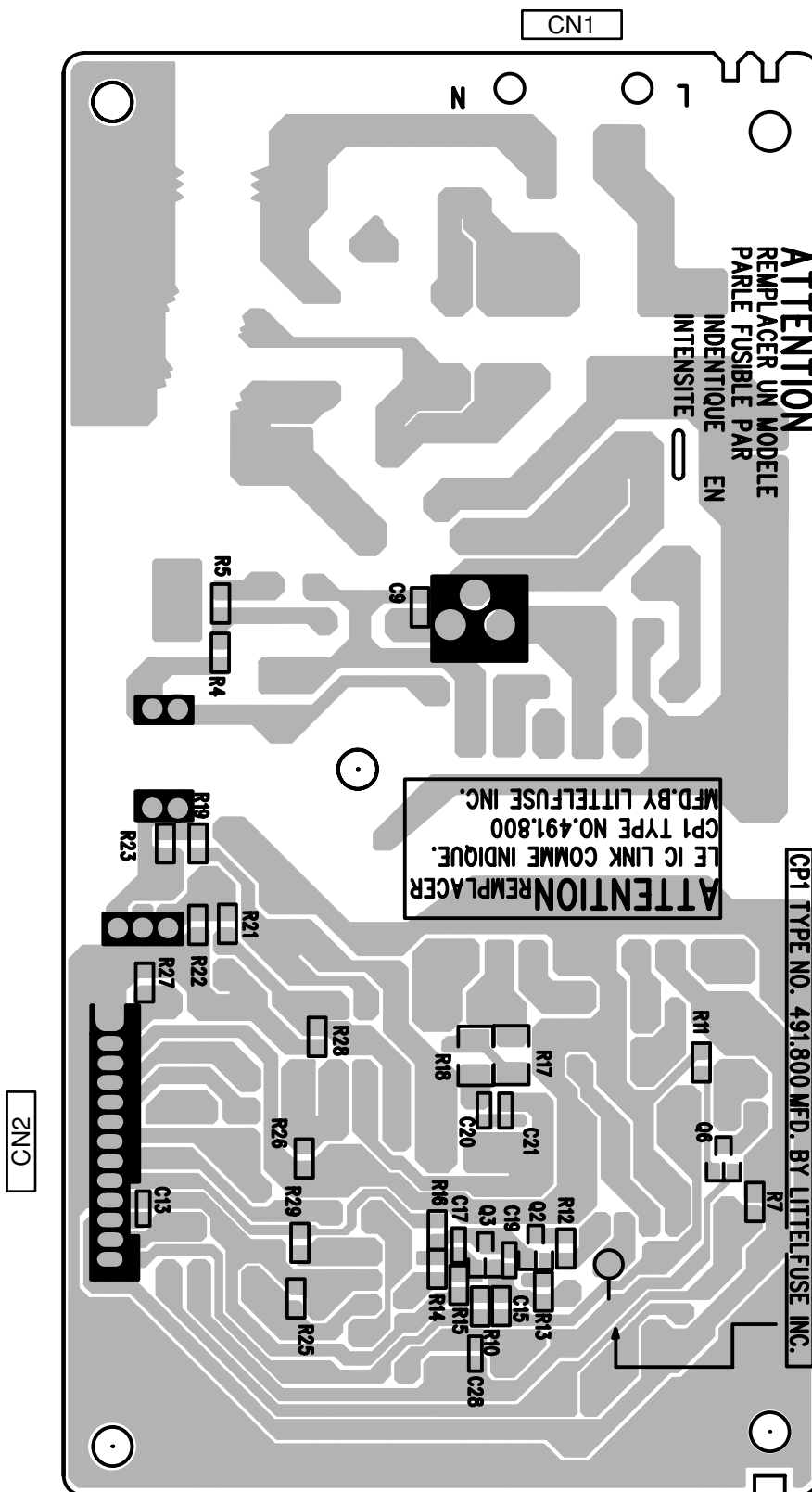
POWER SUPPLY UNIT



SIDE B

SIDE B

F POWER SUPPLY UNIT



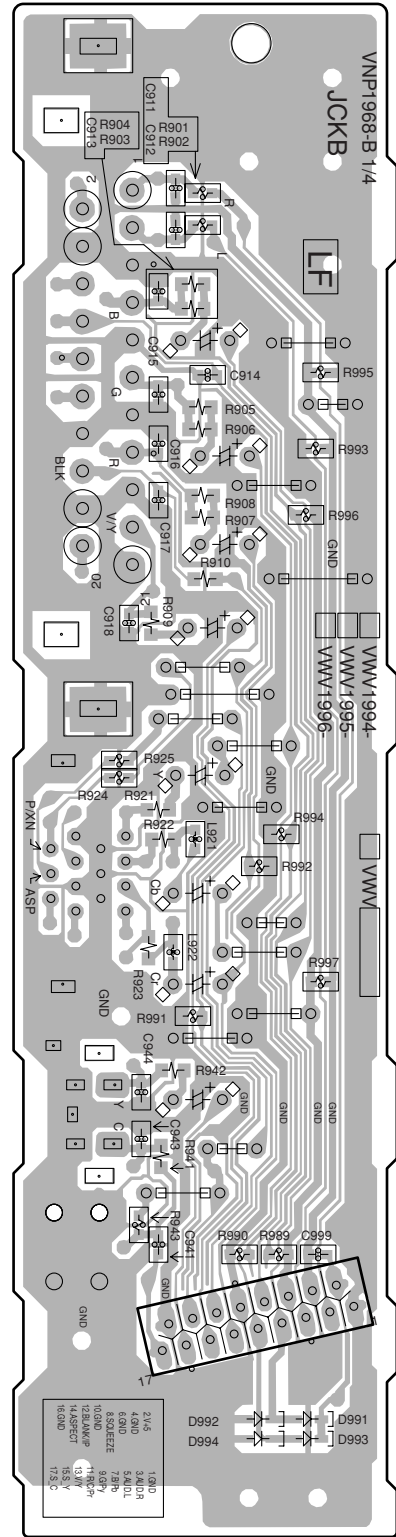
F

F

4

SIDE B

C JCKB ASSY
(VNP1968-B)



CN911

C

C

5. PCB PARTS LIST

NOTES: ●Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.

●The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

●When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω → 56 x 10¹ → 561 RD1/4PU 561J
 47k Ω → 47 x 10³ → 473 RD1/4PU 473J
 0.5 Ω → R50 RN2H R50K
 1 Ω → 1R0 RS1P 1R0K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω → 562 x 10¹ → 5621 RN1/4PC 5621F

Mark No. Description Part No.

LIST OF ASSEMBLIES

[RPWXCN and RLFXJ types]

NSP 1..04 LOADER ASSY VWT1210
 NSP 2..LOAB ASSY VWG2346

1..DVDM ASSY VWS1596

1..JCKB ASSY VVV1994

NSP 1..FLKB ASSY VWM2250
 2..FLKY ASSY VWG2486
 2..PWSB ASSY VWG2482

⚠ 1..POWER SUPPLY UNIT VWR1377

[RTXJN type]

NSP 1..04 LOADER ASSY VWT1210
 NSP 2..LOAB ASSY VWG2346

1..DVDM ASSY VWS1596

1..JCKB ASSY VVV1994

NSP 1..FLKB ASSYV WM2284
 2..FLKY ASSY VWG2512
 2..PWSB ASSY VWG2482

⚠ 1..POWER SUPPLY UNIT VWR1377

Mark No. Description Part No.

A LOAB ASSY [VWG2346] SWITCHES AND RELAYS

S101 VSK1011

OTHERS

CN602 KR CONNECTOR S2B-PH-K
 CN601 KR CONNECTOR S5B-PH-K
 PC BOARD LOAB VNP1879

B DVDM ASSY [VWS1596] SEMICONDUCTORS

⚠ IC321 BA00BC0WT
 IC502, IC602, IC702 BA4560F
 IC204 BR24L16FV-W
 IC202 K4S641632H-TC75
 IC101 M63018FP

IC401 MM1623BF
 IC201 MT1389EE-L1
 ⚠ IC801 NJM78M05FA
 IC501, IC601, IC701 PCM1742KE
 ⚠ IC311 PQ1M505M2SPQ

IC205 PST3228
 ⚠ IC341 S-L2980A33MC-C6S
 IC841 TC7SHU04FU
 IC203 VYW2220
 Q562, Q662, Q762 2SA1576A

Q372, Q373 2SA1602A
 Q371, Q4, Q901 2SC4081
 Q541, Q542, Q544, Q545 2SD2114K
 Q641, Q642, Q741, Q742 2SD2114K
 Q7, Q8 HN1A01F

Q592, Q593 HN1C01FU
 Q5 UM5K1N
 Q561, Q661, Q761 UMH9N
 D801 1SS355
 D591 UDZS6R8(B)

COILS AND FILTERS

L421, L422 CHIP BEADS VTL1089
 L311 CHIP BEADS VTL1095

CAPACITORS

C292, C293, C297 CCSRCH101J50
 C265 CCSRCH220J50
 C142, C227 CCSRCH221J50
 C294, C295, C903 CCSRCH330J50

Mark No. Description**Part No.**

C507, C515, C516, C607

CCSRCH331J50

C615, C616, C707, C715, C716
C254
C211, C212
C251
C252CCSRCH331J50
CCSRCH391J50
CCSRCH561J50
CCSRCH8R0D50
CCSRCH9R0D50C256, C506
C401, C405, C511, C512, C517
C611, C612, C617, C711, C712
C717, C804, C911
C281, C421, C422, C501CEAT100M50
CEAT101M10
CEAT101M10
CEAT101M10
CEAT102M6R3C901
C201, C202, C237, C302, C601
C701, C73
C10, C203, C206, C215
C521, C522, C531, C591CEAT1R0M50
CEAT221M6R3
CEAT221M6R3
CEAT470M16
CEAT470M16C621, C622, C721, C722, C801
C9
C423, C424
C11, C124, C230, C267, C296
C298, C304, C505, C913CEAT470M16
CEAT470M16
CEAT471M6R3
CKSRYB102K50
CKSRYB102K50C130, C134, C136, C226
C313, C606, C706
C219
C209
C112–C114, C513, C514CKSRYB103K50
CKSRYB105K10
CKSRYB152K50
CKSRYB153K25
CKSRYB222K50C613, C614, C713, C714
C269
C208, C210
C258, C259
C255CKSRYB222K50
CKSRYB333K16
CKSRYB472K50
CKSRYB473K50
CKSRYB474K10C125, C204, C205, C207
C213, C214, C216, C217, C220
C222–C225, C228, C231–C236
C239–C241, C244–C246, C253
C257, C260, C262, C264, C266CKSRYF104Z25
CKSRYF104Z25
CKSRYF104Z25
CKSRYF104Z25
CKSRYF104Z25C268, C270–C273, C282
C284–C288, C290, C312, C402
C404, C411, C415, C416, C502
C532, C602, C605, C632, C702
C705, C71, C72, C732, C74CKSRYF104Z25
CKSRYF104Z25
CKSRYF104Z25
CKSRYF104Z25
CKSRYF104Z25C102, C132, C139, C243, C261
C263, C283, C289, C303, C311
C321, C341, C342, C412–C414
C43–C46, C504, C518
C592, C593, C6, C618, C718CKSRYF105Z10
CKSRYF105Z10
CKSRYF105Z10
CKSRYF105Z10
CKSRYF105Z10

C841, C912

CKSRYF105Z10

RESISTORSR222, R225
R515, R520, R615, R620, R715
R720
R511, R514, R611, R614, R711
R714RAB4C330J
RN1/16SE1002D
RN1/16SE1002D
RN1/16SE5601D
RN1/16SE5601DR207–R209, R217
R904
R562, R662, R762
R103, R106
R104, R107RS1/10S0R0J
RS1/10S151J
RS1/10S182J
RS1/10S1R0J
RS1/10S1R8J**Mark No. Description****Part No.**R115–R120
R421–R424
R262, R264, R268, R271, R274
R277
R279RS1/10S4R7J
RS1/10S75R0F
RS1/16S1500F
RS1/16S1500F
RS1/16S2201FR321–R323
R905
Other ResistorsRS1/16S3302F
RS1/16S75R0F
RS1/16S###J**OTHERS**CN301 CONNECTOR
CN103 CONNECTOR
CN452 CONNECTOR
JA502 JACK
JA501 JACKB13B-PH-K
B5B-PH-K
HLEM5S-1
VKB1126
VKB1132JA401 JACK
CN104 4P CONNECTOR
CN102 12P CONNECTOR
CN201 15P CONNECTOR
CN101 24P CONNECTORVKB1168
VKN1235
VKN1243
VKN1246
VKN1464JA901 JACK
X201 (27MHz)VKX1013
VSS1168**D FLKY ASSY [VWG2486]
SEMICONDUCTORS**IC101
D102PE5374B
SLR-343VC**SWITCHES AND RELAYS**

S103, S105–S108, S117, S119

VSG1024

CAPACITORSC183
C151–C153
C102, C105, C182
C104CKSRYB102K50
CKSRYB103K50
CKSRYF104Z25
CKSRYF104Z50**RESISTORS**

All Resistors

RS1/16S###J

OTHERSIC104 REMOTE RECEIVER UNIT
V101 FLUORESCENT TUBE
CN101 15P CONNECTOR
0 CONNECTOR ASS'Y(2P)
X101 (5MHz)RPM7240-H4
VAW1078
VKN1246
VKP2322
VSS1142**D FLKY ASSY [VWG2512]
SEMICONDUCTORS**IC101
D102PE5374B
SLR-343VC**SWITCHES AND RELAYS**

S103, S105–S108, S117, S119

VSG1024

CAPACITORSC183
C151–C153
C102, C105, C182
C104CKSRYB102K50
CKSRYB103K50
CKSRYF104Z25
CKSRYF104Z50**RESISTORS**

All Resistors

RS1/16S###J

	5		6		7		8	
<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>						
<u>OTHERS</u>								
J0	CONNECTOR ASS'Y	PF02GG-B07						
IC104	REMOTE RECEIVER UNIT	RPM7240-H4						A
V101	FLUORESCENT TUBE	VAW1076						
CN101	15P CONNECTOR	VKN1246						
X101	(5MHz)	VSS1142						

E

PWSB ASSY [VWG2482]

SWITCHES AND RELAYS

S101	VSG1024
------	---------

F

POWER SUPPLY UNIT [VWR1377]

OTHERS

⚠ CP1	PROTECTOR (800mA)	AEK7008
-------	-------------------	---------

1234

6. ADJUSTMENT

6.1 ADJUSTMENT ITEMS AND LOCATION

Adjustment Items

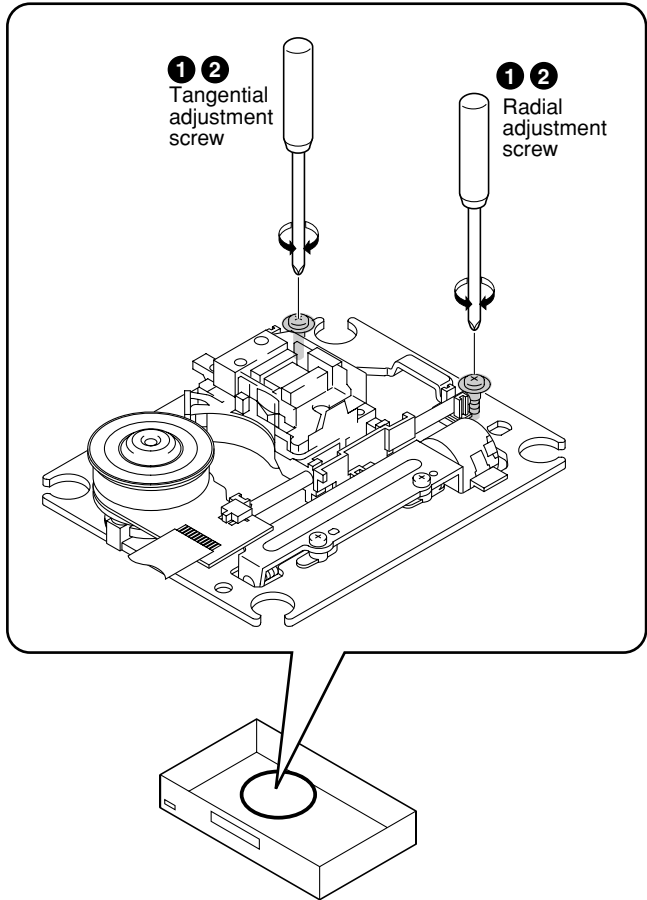
- [Mechanism Part]
- 1 Tangential and Radial Height Coarse Adjustment
 - 2 DVD Error Rate Adjustment

[Electrical Part]



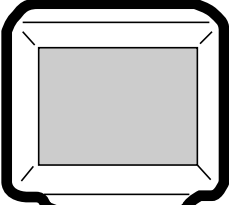
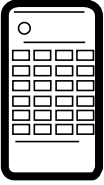


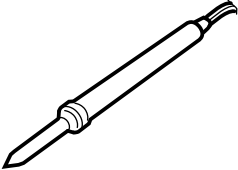
Electrical adjustments are not required.

Adjustment Points (Mechanism Part)

Cautions: After adjustment, adjustment screw locks with the Screw tight.



6.2 JIGS AND MEASURING INSTRUMENTS

 ⊕ Screwdriver (large)	 ⊕ Screwdriver (medium)	 TV monitor	 Test mode remote control unit (GGF1381)
 ⊕ Precise screwdriver	 DVD test disc (GGV1025)	 Soldering iron	Screw tight (GYL1001)

5 6 7 8

6.3 NECESSARY ADJUSTMENT POINTS

When

Adjustment Points

■ Exchange Parts of Mechanism

Exchange the 03 SD Pickup Assy-S



Mechanical
point

①, ②

* After adjustment, screw locks
with the Screw tight.

Electric
point

Exchange the Traverse Mecha.
Assy-S



Mechanical
point

Electric
point

■ Exchange PCB Assy

Exchange PC Board
LOAB and DVDM ASSYS

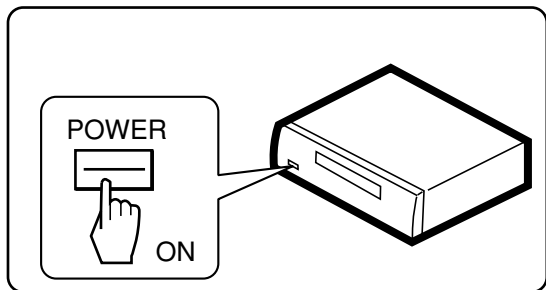


Mechanical
point

Electric
point

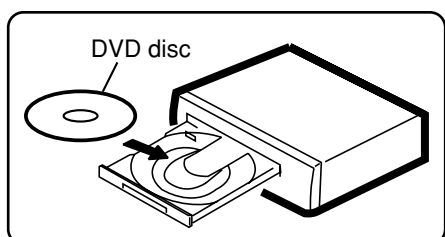
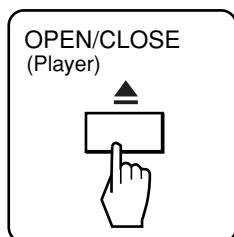
6.4 TEST MODE

POWER ON

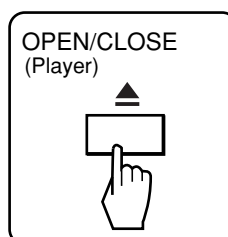


DISC SET

<TRAY OPEN>



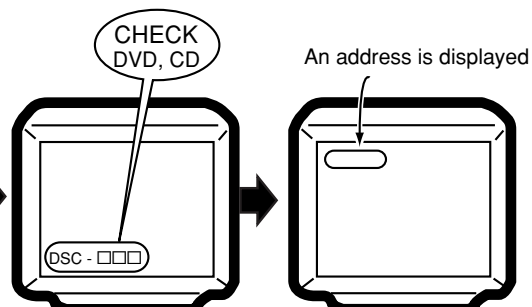
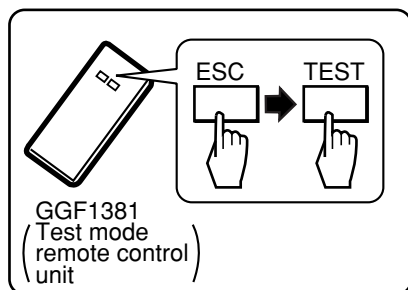
<TRAY CLOSE>



TEST MODE: PLAY

<PLAY>

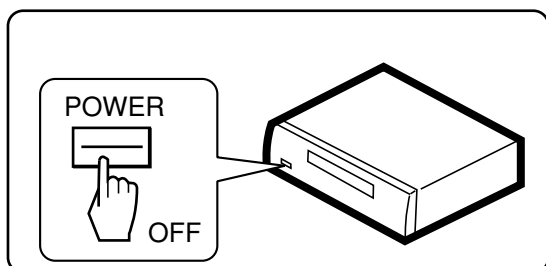
Press the play key (▶) of the normal remote control unit.



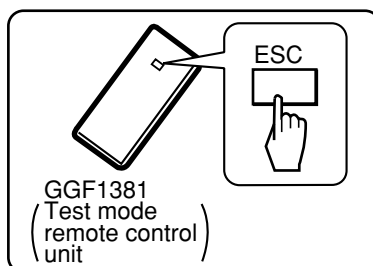
Notes:

- After going into test mode, if you play back the disc, "DISC-NON" is displayed.
- The video signal and the audio signal are outputted during the test mode.
- The SKIP key and the SCAN key are effective during the test mode.

TEST MODE: OFF



OR





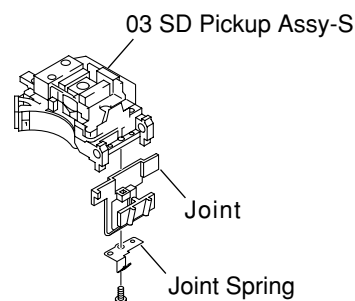
1 Tangential and Radial Height Coarse Adjustment

START

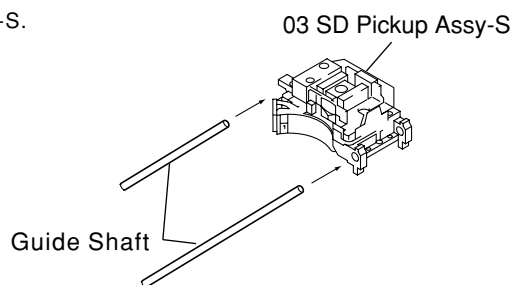
- Remove the 03 SD Pickup Assy-S from the Traverse Mecha. Assy.
- Remove the joint and the joint spring of the 03 SD Pickup Assy-S.

Note:

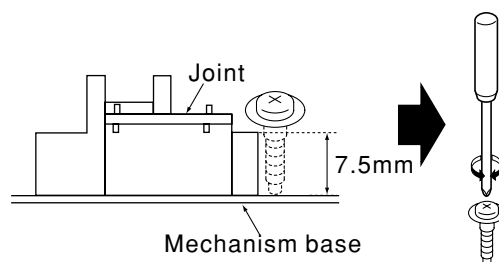
Before removing the flexible cable for the pickup, soldering of the pickup circuit is necessary.
For details, see "7.1.10 DISASSEMBLY".



- Pass through the guide shaft to a new 03 SD Pickup Assy-S.
- Attach it to the Traverse Mecha. Assy.



- Put the joint between the Tangential (or Radial) adjustment screw and the mechanism base and turn each screw to adjust the height.
(Refer to "6.1 ADJUSTMENT ITEMS AND LOCATION".)



- Attach the Traverse Mecha. Assy-S to the 04 LOADER Assy.
- Turn it over and attach the joint and the joint spring.
- Arrange the flexible cables.
(Refer to "7.1.10 DISASSEMBLY".)

2 DVD Error Rate Adjustment

Notes:

- Use disc: GGV1025
- BER:Block Error Rate

START

- Play the DVD test disc at inner track
- Display BER on the monitor



Mechanism Assy

Adjust the radial adjustment screw so that BER becomes under "5E-5".

BER : under "5E-5"

- Play the DVD test disc at inner track (around #30000)

Mechanism Assy

Fasten the radial adjustment screw so that BER becomes over "1E-3".

BER : over "1E-3"

- Unfasten the radial adjustment screw by 90 degrees step till BER becomes over "1E-3" again .
- Record the number of rotation (N1).

- Fasten the radial adjustment screw till the number of rotation becomes half of N1.



- Play the DVD test disc at outer track (around #200000)

→ Service mode



Mechanism Assy

Fasten the tangential adjustment screw so that BER becomes over "1E-3".

BER : over "1E-3"

- Unfasten the tangential screw by 90 degrees step till BER becomes over "1E-3" again .
- Record the number of rotation (N1).
- Fasten the tangential adjustment screw till the number of rotation becomes half of N1.



CHECK

Confirm that the error rate is under "5E-5".

Turn the POWER OFF in case of NG once, and perform the adjustment once again.

If error rate is OK, locks a root of tangential and radial adjustment screws with the Screw tight. Screw tight: GYL1001

Disc playback normally.
• The measurement of block error rate



7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 TEST MODE

■ Test Mode Functional Specification

① Test mode entry

In the power ON state, press the [ESC] (A8-5F) key and [TEST / RANDOM] (A8-5E) key in order of the Test mode remote control unit.

- Light the all FL and LEDs.
- OSD displays test mode.

Note:

- * When pressing the keys of something, the FL displays "NO DISC" and the LED lighting disappears.

② Release the Test mode

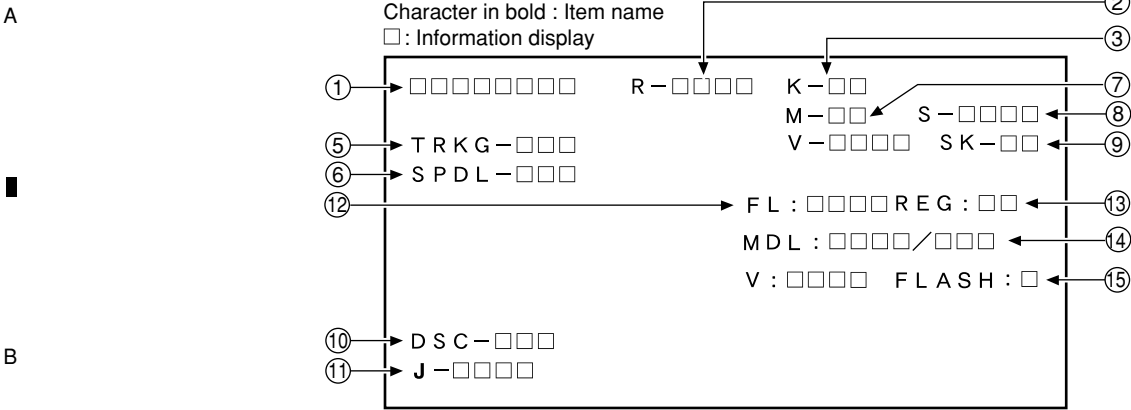
- Turn off the power.
- Press the [ESC] (A8-5F) key of the remote control unit and reset it.

③ LD ON

DVD : Press the [TEST] (A8-5E) and [1] (A8-01) keys in order, and turn on the laser diode (650n).

CD : Press the [TEST] (A8-5E) and [4] (A8-04) keys in order, and turn on the laser diode (780n).

7.1.2 DISPLAY SPECIFICATION OF THE TEST MODE



① Address indication

The address being traced is displayed in number.
(as for the DVD, indication of decimal number is possible.)
DVD : ID indication (hexadecimal number, 8 digits)

CD : ID indication [* * * * * * * *]

② Code indication of remote control unit [R - * * * *]

In case of double code, display a 2nd code.

③ Main unit keycode indication [K - * *]

⑤ Tracking status [TRKG - * * *]

Tracking on : [ON]
Tracking off : [OFF]

⑥ Spindle status [SPDL - * * *]

[OFF], [CLV]

⑦ Mechanism (loading) position value [M - * *]

Unknown : [01] or [41]
Open state : [04]
Close state : [08]
During opening : [12]
During closing : [22]

⑧ Slider position [S - * * * *]

In Side Switch ON : [01]
In Side Switch OFF : [00]

⑨ Output video system [V - * * * *]

NTSC system : [NTSC]
PAL system : [PAL]
Automatic setting : [AUTO]

Scart terminal output [SK - * *]

(Display only the WY model which can do the output setting
of scart terminal.)

VIDEO : [00]
S-VIDEO : [01]
RGB : [02]

⑩ Disc sensing [DSC - * * *]

The type of discs loaded is displayed.
[DVD], [CD], [VCD], []

⑪ Jitter value [J - * * * *]

Note:Don't use it.

⑫ Version of the FL controller [FL: * * * *]

⑬ Region setting of the player [REG: *]

Setting value : [1] to [6]

⑭ Destination setting of the FL controller [MDL: * * * * / * * *]

Four characters in the front represent code 01.
Three characters in the back represent the destination code.
J: /J, K: /KU, /KC, /KU/KC, R: /RL/RD, RAM : /RAM,
LB: /LB, WY: /WY

⑮ Version of the flash ROM [V: * * . * *]
Flash ROM size [FLASH = * *]

7.1.3 FUNCTIONAL SPECIFICATION OF THE SHORTCUT KEY

Only during normal playback, the following shortcut keys can be assigned by pressing a required key after pressing the ESC key of the remote control unit. To quit, press the ESC key

Command Contents	Conditions	Remote Control Key Name	Remote Control Code
Memory clear and region / revision indication		CLEAR (*1)	A8-45
Average value measurement of DVD error rate		5 (*1)	A8-05
CD error rate measurement		5 (*1)	A8-05
Scart terminal output : VIDEO	WY, models equipped with Scart terminal	AUDIO	AF-BE
Scart terminal output : S-VIDEO		SUBTITLE	AF-36
Scart terminal output : RGB		ANGLE	AF-B5
Progressive OFF	Only for progressive models	R_SKIP	A3-9D
Progressive ON		F_SKIP	A3-9C
FL indication of ID number		STEREO (*1)	A8-4A
ZOOM ON (X2 -> X4 -> x1)		ZOOM	AF-37
Service mode indication (error rate indication, etc.)		CHP/TIM (*1)	A8-13
Model information indication		CHAP (*1)	A8-40
Title search Input mode IN Title No. input Search execution		SIDE A (*1) Numbers (*1) PLAY (*1)	A8-4D A8-00 to A8-09 A8-17
Region confirmation mode		AUDIO (*1) Numbers (*1)	A8-1E A8-01 to A8-08

*1 : Test mode remote control unit

• Service mode indication (ESC + CHP/TIM keys)

ID Address

The error rate is always displayed in exponential notation, e.g., *. * * e - *, for both DVDs and CDs.

EDC/ID/AV 1 error history (ID Address, EDC/ID Error, last eight errors)

• Calculation of the average error rate (ESC + "5" [Test mode remote control unit] keys)

The average of the last eight error rates is calculated and indicated in exponential notation. After the calculation is completed, "OK" or "NG" is displayed. If "NG" is displayed, the disc tray will open (for both DVDs and CDs)

For DVDs: OK with 5.0e-4 or less, for CDs: OK with 7.6e-3 or less

• Indication of model information (ESC + CHAP keys)

The items from 12 to 15 of the TEST MODE Indications are displayed. However, in the indications, S in the standard test mode is changed to CHIP VERSION, and M is changed to RF VERSION. For details, see 7.1.4.

• Region confirmation mode (ESC + AUDIO [Test mode remote control unit] + "1"- "8" [Test mode remote control unit] keys)

After you press the AUDIO key while holding the ESC key pressed and then input the region number, if the number is different from that set in the unit, an error message is displayed, and the tray opens.

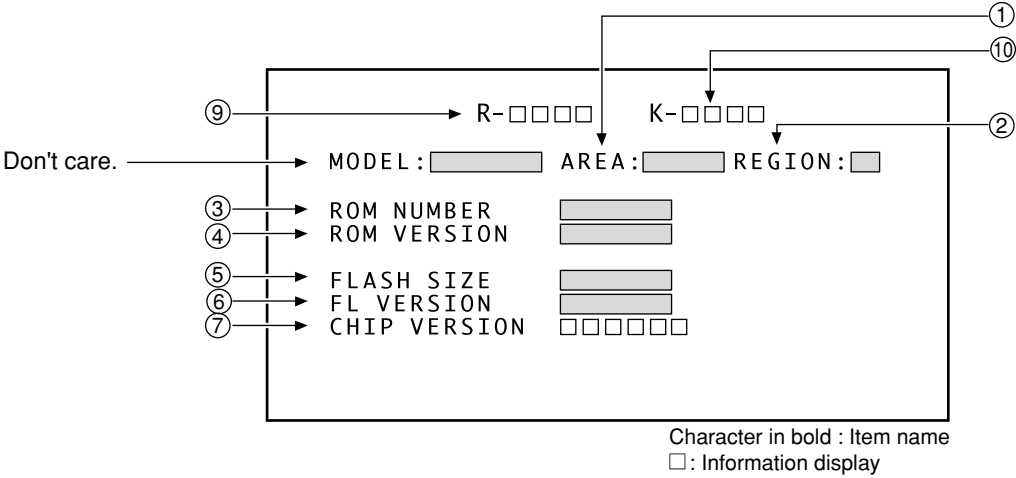
1234

7.1.4 SPECIFICATION OF MODEL INFORMATION DISPLAY

To display model information : Press the ESC key then the CHAP key.
To close the model information display : Press the ESC key.

A

• Display contents



- C
- ① **Destination indication**
Display it according to model information set from the FL controller.
 - ② **Region No.**
 - ③ **Part number**
 - ④ **ROM version**
 - ⑤ **Flash size**
 - ⑥ **FL controller version**
 - ⑦ **CHIP VERSION**
- D
- ⑨ **Remote control code**
 - ⑩ **Key code of Main unit**

7.1.5 FUNCTIONAL SPECIFICATION OF THE SERVICE MODE

• Display during Service Mode

To enter Service Mode, press the CHP/TIM key while holding the ESC key pressed.
To quit, press the ESC key.

Service mode display

① ID Address

② Error rate (always displayed), in exponential notation

ERROR RATE : * * * * *

(* * * *)

↑
Number of error

• Calculation of the average error rate

For DVDs: OK with 5.0e-4 or less, for CDs: OK with 7.6e-3 or less

ex) For DVDs

• Step 1

△△e -□

△△e -6 : OK

△△e -5 : OK

△△e -4 : Refer to Step 2

△△e -3 : NG

△△e -2 : NG

• Step 2

△△e -4

3.0e -4 : OK

4.0e -4 : OK

5.0e -4 : OK

6.0e -4 : NG

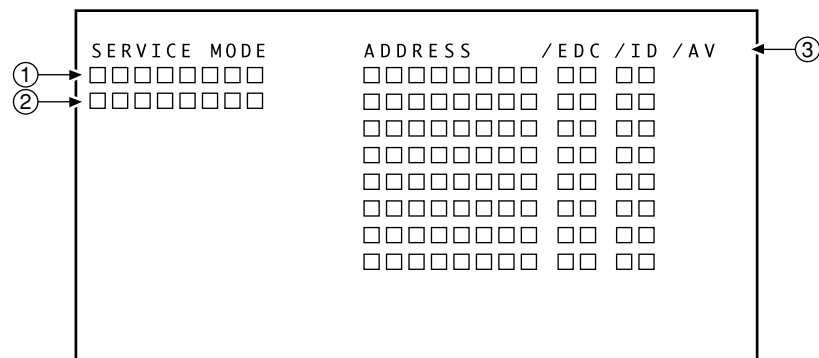
7.0e -4 : NG

③ EDC/ID error history (ID Address, EDC/ID errors, last eight errors)

Note:

* Error of AV1 is not supported in this player.

Indication plan contents



Character in bold : Item name

□ : Information display

7.1.6 METHOD FOR DIAGNOSING DEGRADATION OF THE LDS ON THE PICKUP ASSY

Case when this diagnosis is required :

When playback of any disc, including a test disc (DVD: GGV1025, CD: STD-905), cannot be performed

How to diagnose

In the case mentioned above, degradation of the laser diodes (LDs) mounted on the 03 SD Pickup Assy-S is suspected.

Measure the voltage between the two ends of one of the resistors mentioned below.

• No playback of a DVD :

Measure the voltage between the two ends of R22 or R25 on the DVDM Assy.

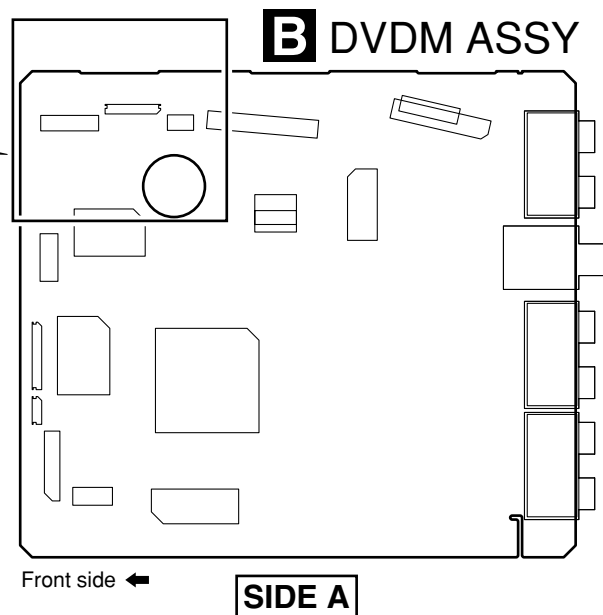
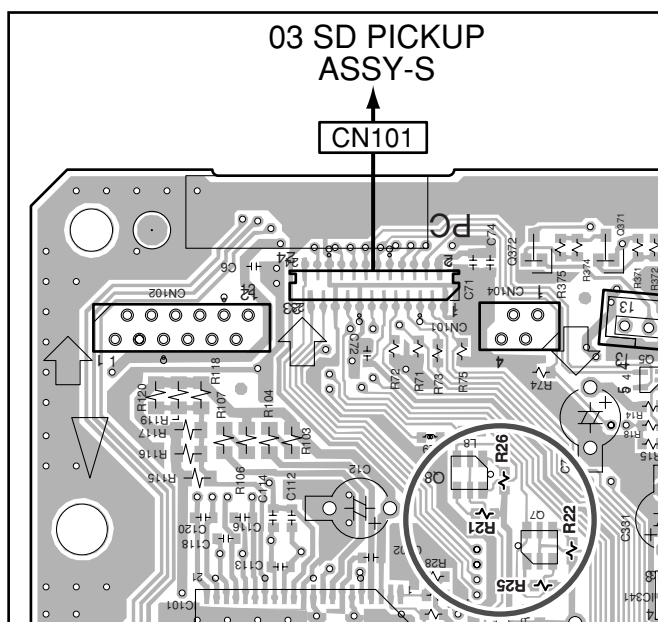
If the voltage is 0.4 V or higher, the 650-nm LD is degraded.

• No playback of a CD :

Measure the voltage between the two ends of R21 or R26 on the DVDM Assy.

If the voltage is 0.4 V or higher, the 780-nm LD is degraded.

If the measurements show degradation of an LD, replace the 03 SD Pickup Assy-S.



7.1.7 TROUBLE SHOOTING

No.	Symptoms	Diagnosis Contents	Possible Defective Points
1	The power is not turned on.	Check the voltage of EV4.0V, -28V, FLDC + and FLDC - on the POWER SUPPLY Unit.	POWER SUPPLY Unit
		Are wires of output connector (POWER SUPPLY Unit) and CN301 (DVDM Assy) disconnected or damaged ?	Connector / cable
		Check that the voltage at IC101-pin 22 (KEY0) on the FLKY Assy becomes 0 V when the POWER key is pressed and 3.3 V when it is released.	FLKY Assy Tact SW (when operation of only the POWER key on the main unit is not accepted)
		Check that the following voltage is output : IC341-pin 5 : 3.3V on the DVDM Assy	DVDM Assy 3.3V Regulator IC (IC341)
		Check that the voltage at IC101-pin 17 (SEL IR) on the FLKY Assy is in the range between 0 and 3.3 V while receiving signals from the remote control unit when any key on it is pressed.	FLKY Assy Remote receiver section (when operation of only the POWER key on the remote control unit is not accepted)
2	An opening screen is not displayed on the monitor (The FL display lights. The mechanism does not work.)	Is the level at both IC101-pin 12 (RESETOUT) and pin 11 (POWER ON) on the FLKY Assy "H" ?	FLKY Assy FL Control IC (IC101)
		• Check the voltage of E+6.8V and SW3.3V on the POWER SUPPLY Unit. • Check the voltage of Pcont is about 3V on the POWER SUPPLY Unit.	POWER SUPPLY Unit
		Check that the following voltage are output : IC311-pin 5 : 5V on the DVDM Assy.	DVDM Assy 5V Regulator IC (IC311)
		Is a resonator (X201 : 27MHz) on the DVDM Assy oscillating ?	DVDM Assy Crystal resonator (X201)
		• Is a signal input into IC203-pin26 (PCE#) on the DVDM Assy ? (Is a signal "H" for 80 mS and then "L" after the power is turned on ?) → Communication with flash ROM. • Are the signals input into IC202-pin 16 (DWE#), pin 19 (DCS#) and pin 38 (SDCLK) on the DVDM Assy ? (Is a signal fluctuating ?) → Communication with SDRAM	DVDM Assy DVD IC (IC201) Flash ROM (IC203) SDRAM (IC202)
		Is a signal output from IC203-pin 28 (PRD#) on the DVDM Assy? (Is a signal fluctuating for several hundred mS after the power is turned on ?)	DVDM Assy Flash ROM (IC203)
		Is a signal input into IC101-pin 16 (ACK) on the FLKY Assy ? (Is a signal fluctuating ?) → Communication with FL Control IC	DVDM Assy DVD IC (IC201) FLKY Assy FL Control IC (IC101)
		Is a signal output from IC101-pin 10 (XREADY) on the FLKY Assy ? (Is a signal fluctuating in the range of 0-3V ?)	FLKY Assy FL Control IC (IC101)
		Are the signals output from IC101-pin 9, pin 8 and pin 7 on the FLKY Assy ? (in the range of 0-3V)	DVDM Assy DVD IC (IC201) – FLKY Assy FL Control IC (IC101) communication line
		Are the signals of IC204-pin 5(SDA) and pin 6(SCL) on the DVDM Assy fluctuating for one or two seconds after the power is turned ?	DVDM Assy EEPROM (IC204)
3	An opening screen is not displayed on the monitor (The FL display lights. The mechanism does not work.)	Check the video signal path between DVD IC (DVDM Assy IC201) and video-out terminal (see the block diagram)	DVDM Assy Video circuit after DVD IC (IC201)

No.	Symptoms	Diagnosis Contents	Possible Defective Points
4	A tray cannot be opened. (An opening screen is displayed on the monitor)	Does the voltage of CN103-pin 3 and pin 5 on the DVDM Assy change normally ? Pin 3 (SW2(TRIN)): Tray is fully closed: "L" Pin 5 (SW1(TROUT)): Tray is fully opened: "L"	LOAB Assy Tray SW (S101)
		Is a LOAD-DRV signal reaching ?	DVDM Assy DVD IC (IC201)
		Are the signals output from IC101-pin 36 and pin 37 (CN103-pin 1 and pin 2) on the DVDM Assy ? Pin 36: Approx. 6V during opening tray approx. 0V during closing tray. Pin 37: Approx. 0V during opening tray approx. 6V during closing tray.	DVDM Assy FTS Driver IC (IC101)
		Are wires of CN104 and CN103 on the DVDM Assy disconnected or damaged ?	Connector / cable
		Does the voltage of CN102-pin 12 change by pressing the Inside switch.	Inside switch
5	B Playback impossible (no focusing)	Are the signals output from IC101-pin 34 (FOCS_DRV) and pin 35 (FOCS_RTN) on the DVDM Assy ?	DVDM Assy FTS Driver IC (IC101)
		Does 650-nm LD emit light ? Does a pickup lens move up / down ? Does an actuator spring bend ?	Pickup
		Are plastic parts damaged ? Or is a shaft detached ? Is the turntable detached or tilted ?	Mechanism section (motor)
		Is flexible cable of CN101 on the DVDM Assy disconnected or damaged ?	Flexible cable / connector
		Is signal output from IC201-pin 42 (FOSO) on the DVDM Assy ? (Device control of about 1.4 V is output usually. It is fluctuated by about ± 250 mV with focus up / down.)	DVDM Assy DVD IC (IC201)
6	C Playback impossible (Spindle does not turn)	Are the signals output from IC101-pin 12 (W), pin 13 (V) and pin 14 (U) on the DVDM Assy ? Is pin 41 (STBY) fixed LOW and is pin 38 (ENDM) fixed LOW ?	DVDM Assy FTS Driver IC (IC101)
		Is there any part detached from the spindle motor ? Or Is there any foreign object lodged in it ?	Mechanism section (Spindle motor)
		Are wires of CN102 on the DVDM Assy disconnected or damaged ?	Flexible cable / connector
		Is signal output from IC201-pin 37 (DMSO) on the DVDM Assy ?	DVDM Assy DVD IC (IC201)
7	D Playback impossible (Playback stops)	Does 650-nm LD deteriorate ? If the voltage at each both ends of R22 and R25 on the DVDM Assy is 0.4 V or more, the 650-nm LD is definitely deteriorated.	650-nm LD deteriorated. (When playback of a DVD is impossible)
		Does 780-nm LD deteriorate ? If the voltage at each both ends of R21 and R26 on the DVDM Assy is 0.4 V or more, the 780-nm LD is definitely deteriorated.	780-nm LD deteriorated. (When playback of a CD is impossible)
		Is there abnormality in FG waveform ?	DVDM Assy FG output : FTS Driver IC (IC101)
		Are there scratches or dirt on the disc ?	Disc
8	Picture disturbance during playback (block noise, freeze, other)	Are there scratches or dirt on the disc ? Is there a problem with the format of the disc ?	Disc
9	E No sound (Picture is normal)	Check the waveform (ABCK, ALRCK, ACLK, ASDATA).	DVDM Assy DVD IC (IC201)
		Is signal output from audio DAC IC on the DVDM Assy ? Main CH : IC501-pin 7, pin 8 Multi CH : IC601-pin 7, pin 8, IC701-pin 7, pin 8	DVDM Assy Audio Dac IC (IC501) Audio Dac IC (IC601, IC701)

● Symptoms That May Occur When Any Of The Following ICs Is In Failure

IC	Symptoms
EEP ROM (DVDM Assy : IC204)	User's data cannot be stored in memory. The ID number is lost.
16M Flash ROM (DVDM Assy : IC203)	The power cannot be turned on. Downloading of the firmware cannot be performed.
DVD IC (DVDM Assy : IC201)	Any kind of symptoms (no power, a failure in any of the servo, video and audio systems, etc.) may be generated, because the DVD processing is performed by a single chip.
64M SDRAM (DVDM Assy : IC202)	No power. Block noise is generated during playback.

7.1.8 ID NUMBER AND ID DATA SETTING

Caution:

For the DVD players compatible with DVD-RW, for playback of a DVD-RW disc (CPRM), it is necessary that an individual ID number and ID data are set for each player. If the ID number and ID data be not properly set in the manner described below, future operations cannot be guaranteed. The ID number is written on the yellow label at the rear panel of the player.

If there is no yellow label, before downloading FLASH ROM, take note of the ID number set following the procedures outlined in "ID Number Confirmation Mode" on the next page.

Note: Enter ID numbers while the unit is in Stop mode so that the values set will be immediately written to the flash ROM.

Setting an ID number or ID data is required in the following case:

If "No ID Number!" or "NO ID DATA!" is displayed on the TV screen and on the FL display for a few seconds immediately after the power to the player is turned on or during Stop mode.

- ⑤ After entering all 9 digits, if you press the SEARCH key, the unit unconditionally sets the input number as the ID number. Then the unit automatically enters Player's Data Input Mode. (The SEARCH key is not accepted after all 9 digits have been entered.)

[Player's ID Number Setting]

ID Number ?

0 0 0 0 0 0 0 1

④ → <PLAY> Compare Mode

⑤ → <SEARCH> Enter

Input ID Number !



- ⑥ This display appears when the PLAY key is pressed in Step 4. Enter a 9-digit number to compare. The number is also displayed on the FL display.

- ⑦ By pressing the CLEAR key without having input a number, the unit returns to Step ② without doing anything else. Each press of this key after a number has been input deletes one digit.

[Player's ID Number Setting]

ID Number ?

0 0 0 0 0 0 0 1

Compare

* * * * *

⑥ →

Input ID Number !



- ⑧ After entering all 9 digits, if you press the PLAY key, the unit compares the numbers input in Steps ② and ⑥, and only if the numbers match, that number is set as the ID. Then the unit automatically enters ID DATA Input Mode. If the numbers do not match, the disc tray is opened, and the unit exits ID Number Input Mode.

Note: If you press the PLAY button before inputting a 9-digit ID number, the unit returns to Step ⑥ without doing anything else.

[Player's ID Number Setting]

ID Number ?

0 0 0 0 0 0 0 1

Compare

0 0 0 0 0 0 0 1

⑧ → <PLAY> Enter

Input ID Number !

ID Number Input Mode

- ① To enter ID Number Input Mode, with no ID number set, such as in a case of immediately after upgrading the firmware, press the ESC key then the STEREO key.

Note: If a previous ID number and ID data, such as a factory-preset ID number and ID data, are maintained, the unit enters ID Number Confirmation Mode when the above keys are pressed. However, if only an ID number is maintained, the unit enters ID Data Input Mode.

- ② Enter a 9-digit ID number. The ID number is also displayed on the FL display.

- ③ By pressing the CLEAR key without having input a number, you can exit this mode. Each press of this key after a number has been input deletes one digit.

[Player's ID Number Setting]

ID Number ?

② → - - - - -

③ → <CLEAR> Exit

Input ID Number !



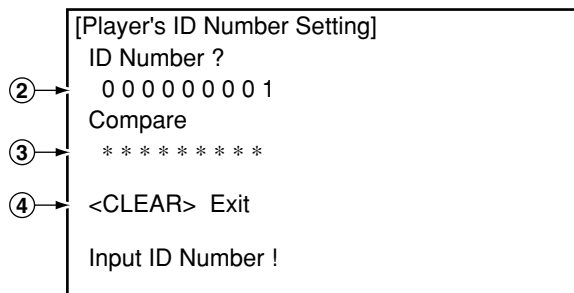
- ④ After entering all 9 digits, if you press the PLAY key, the unit enters Compare mode. Enter the same ID number again. Only if your two input numbers match, the ID number is set. Compare mode helps eliminate mistyping of the ID number.

Note: If you press the PLAY button before inputting a 9-digit ID number, the unit returns to Step ② without doing anything else.



■ ID Number Confirmation Mode

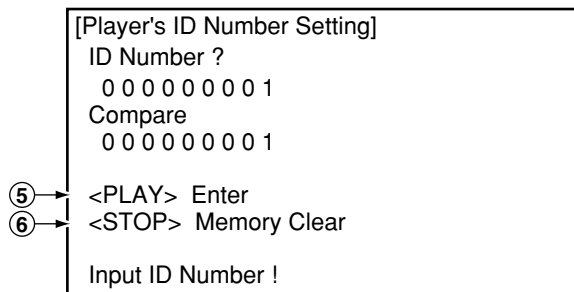
- ① To enter ID Number Confirmation Mode after the ID number and the ID data are set, press the ESC key then the STEREO key.
- ② The ID number already set is displayed.
(It is also displayed on the FL display.)
- ③ Enter a 9-digit number for comparison. This is not required when you only wish to check the ID number visually.
(The number is also displayed on the FL display.)
- ④ By pressing the CLEAR key without having input a number, you can exit this mode. Each press of this key after a number has been input deletes one digit.



- ⑤ After entering all 9 digits, if you press the PLAY key, the unit compares the number entered in Step ② with the ID number set, and only if the numbers match, the unit automatically exits ID Number Confirmation Mode. If an ID data has not been entered, the unit enters ID DATA Input Mode. If the numbers do not match, the disc tray is opened, and the unit exits ID Number Confirmation Mode.

Note: If you press the PLAY button before inputting a 9-digit ID number, the unit returns to Step ④ without doing anything else.

- ⑥ After entering all 9 digits, if you press the STOP key, the unit compares the number entered in Step ③ with the ID number set, and only if the numbers match, the unit automatically deletes the ID number and exits this mode. If the numbers do not match, the disc tray is opened, and the unit exits this mode. (The STOP key is not accepted after all 9 digits have been entered.)



• Indication of an ID number already set

An ID number already set is displayed in the following cases:

- 1) When the ESC key then the CLEAR key are pressed, user settings are cleared, then the ID number set is displayed on the screen. In this case, the ID number is not displayed on the FL display.
- 2) When the unit enters ID Number Confirmation Mode by your pressing the ESC key then the CLEAR key, the ID number set is displayed. In this case, the ID number is also displayed on the FL display.
If you only need to confirm the ID number, you can exit this mode by pressing the CLEAR key or turning off the power.

• Indication when no ID number is set

If no ID number is set, the message "No ID Number!" flashes on the screen and FL display for a few seconds after the power is turned on or during Stop mode.

ID DATA Input Mode

① To enter ID DATA Input Mode, with the ID number set, press the ESC key then the STEREO key.

② When the STEREO key is pressed, the unit enters ID DATA Input Mode.

[Player's ID Number Setting]
ID Number ?
[0 0 0 0 0 0 0 1]
Compare
> * * * * *

<CLEAR> Exit
<STEREO> ID Data Setting Mode

Input ID Number !



③ If the DVD DATA DISC is loaded in this mode, the unit automatically starts reading the data.
(If the DVD DATA DISC has already been loaded, the unit does not start reading the data. In this case, open then close the tray.)

④ To exit this mode, press the CLEAR key. While data are being read from the DVD DATA DISC, you cannot exit this mode.

[Player's Data Input Mode]

④ → <CLEAR> Exit

Insert The ID Data Disc !



⑤ When writing of the data read from the disc to flash ROM is completed, "Rom Write OK!" is displayed. After seeing this message, you can exit this mode by pressing the CLEAR key.

Note: Whether or not the data have been written to flash ROM can be confirmed by watching for the message "Rom Write OK!" being displayed after the disc is read.

[Player's Data Input Mode]

⑤ → Rom Write OK!

<CLEAR> Exit



⑥ If the data cannot be read from the disc, "Disc Error!" is displayed on the screen, and the disc is ejected.

[Player's Data Input Mode]

⑥ → Disc Error!

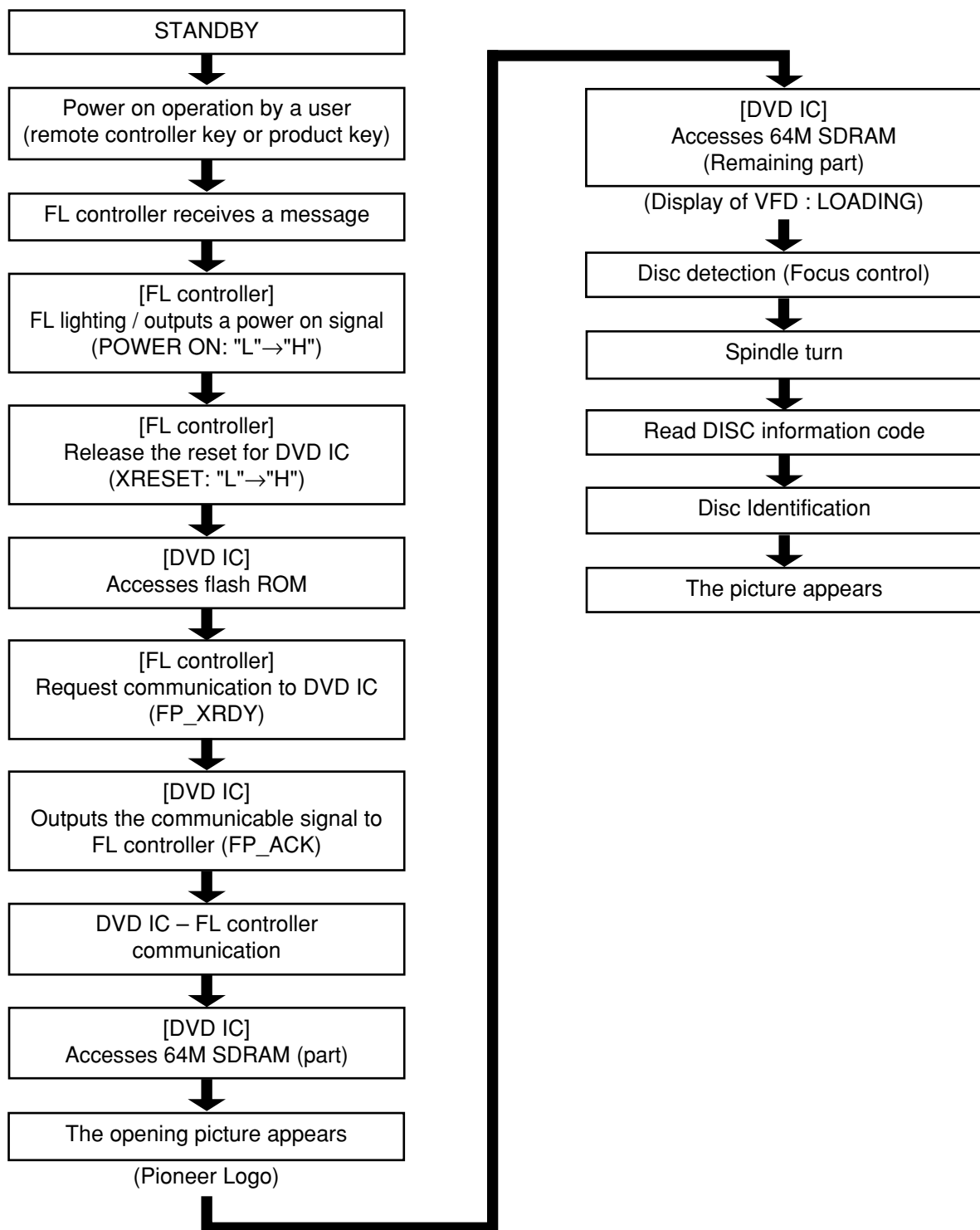
<CLEAR> Exit

• Indication when the data have not been set

If no ID data are set after the ID number is changed, the message "NO ID DATA" flashes on the screen and FL display for a few seconds after the power is turned on or during Stop mode.

7.1.9 SEQUENCE AFTER POWER ON

Flow chart from power on to the picture output







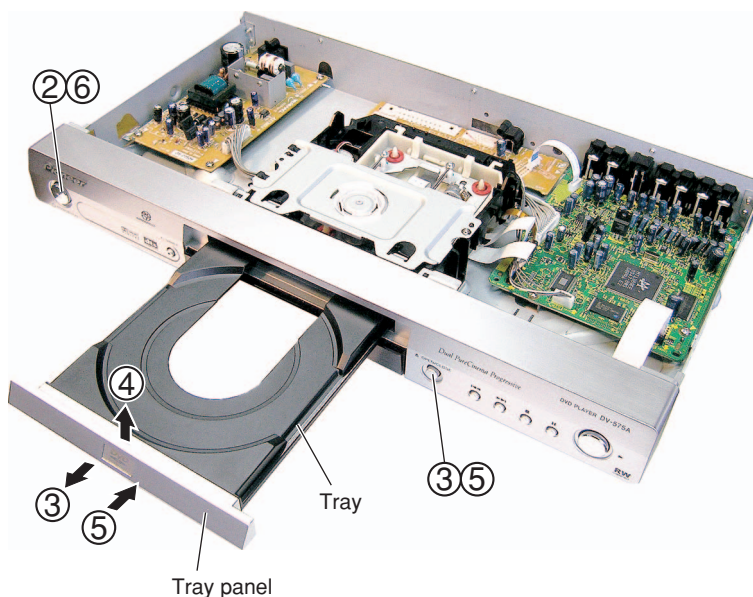
7.1.10 DISASSEMBLY

Note: Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.

Diagnosis of the DVDM Assy

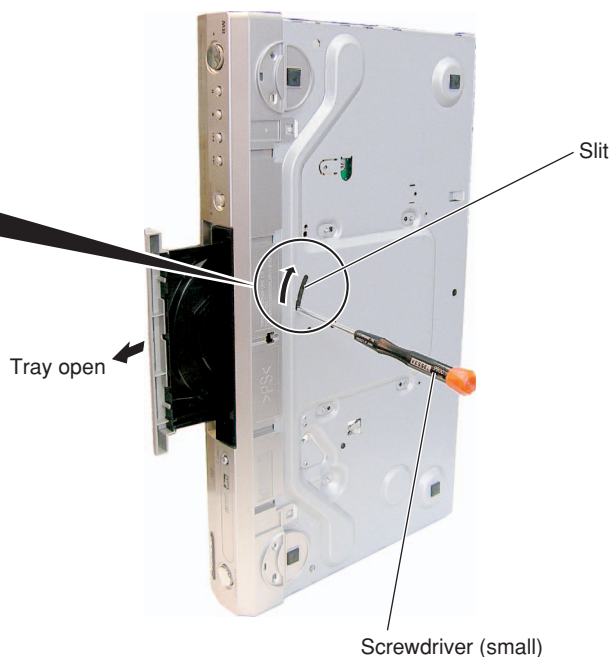
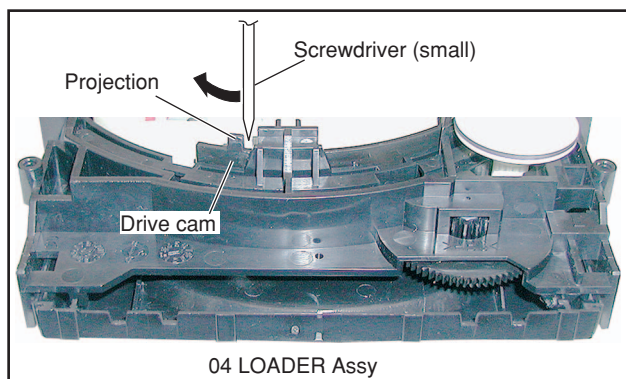
1 Bonnet and Tray panel

- ① Remove the bonnet by removing the seven screws.
- ② Press the  STANDBY/ON button to turn on the power.
- ③ Press the  button to open the tray.
- ④ Remove the tray panel.
- ⑤ Press the  button to close the tray.
- ⑥ Press the  STANDBY/ON button to turn off the power.



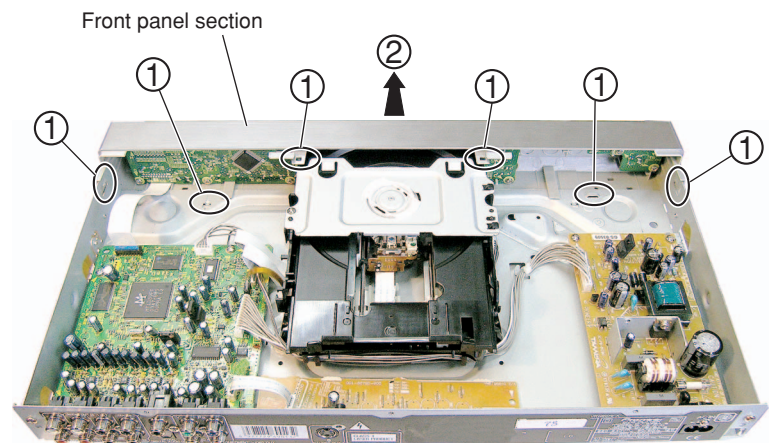
How to open the Tray when the power cannot be on

Insert a screwdriver (small) into the slit located at the bottom of the unit, and slide the projection of the drive cam in the 04 LOADER Assy in the direction of the arrow, as indicated in the photo. If the tray pops out a little, fully pull it out by a hand.



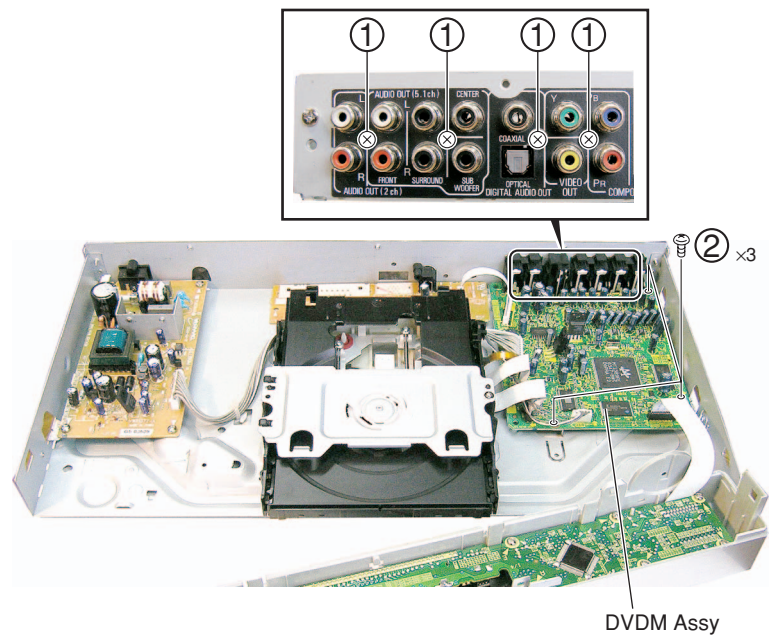
2 Front panel section

- ① Remove the six hooks.
- ② Remove the front panel section.



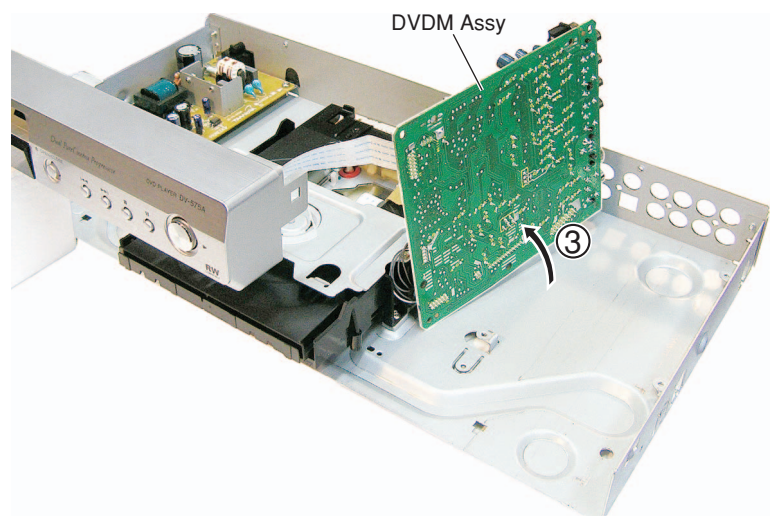
3 DVDM Assy

- ① Remove the four screws.
- ② Remove the three screws.



- ③ Remove the DVDM Assy and stand it against the other parts.

Diagnosis



4 04 LOADER Assy

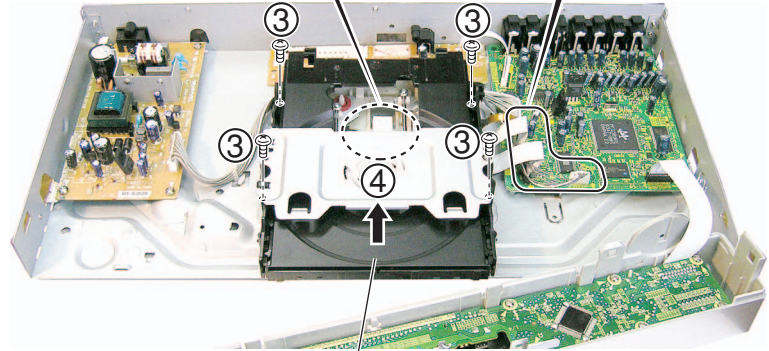
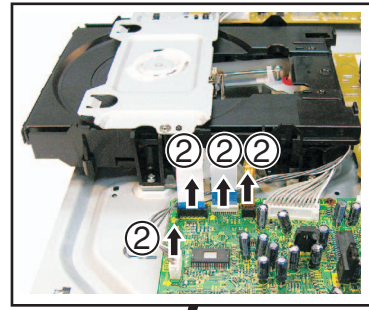
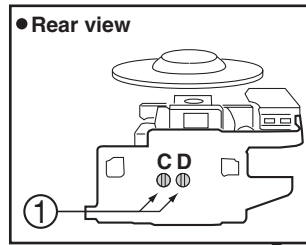
① Short-circuit two points of C and D by soldering.

Note: After replacement, connect the flexible cable, then remove the soldered joint (open).

② Disconnect the four connectors.

③ Remove the four screws.

④ Remove the 04 LOADER Assy.

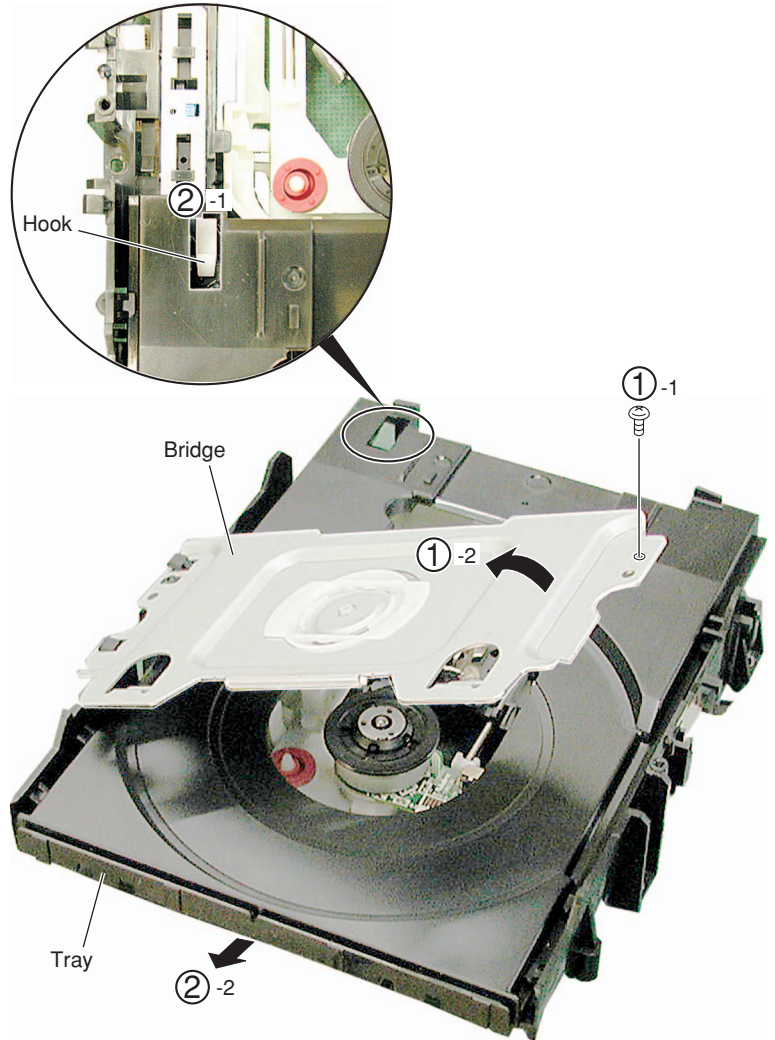


04 LOADER Assy

Removing the Traverse Mecha. Assy-S and 03 SD Pickup Assy-S

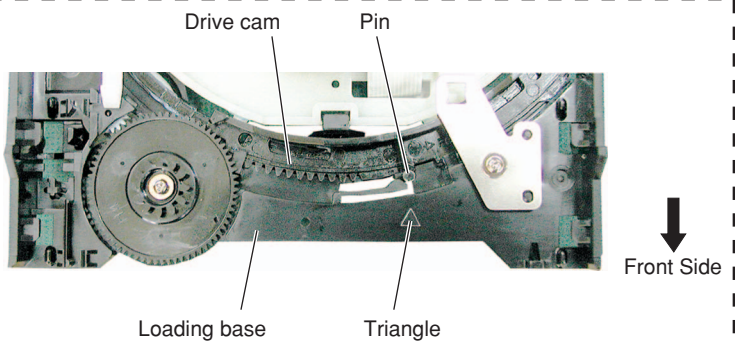
1 Bridge and Tray

- ① Remove the bridge by removing the one screw.
- ② Pull out the tray, then remove it by pressing the hook.



Note when reinserting the Tray

When reinserting the tray, first align the triangle printed on the loading base and the pin of the drive cam, then insert the tray.



2 Traverse Mecha. Assy-S

- ① Dislodge the flexible cables from their packaged placement.

A

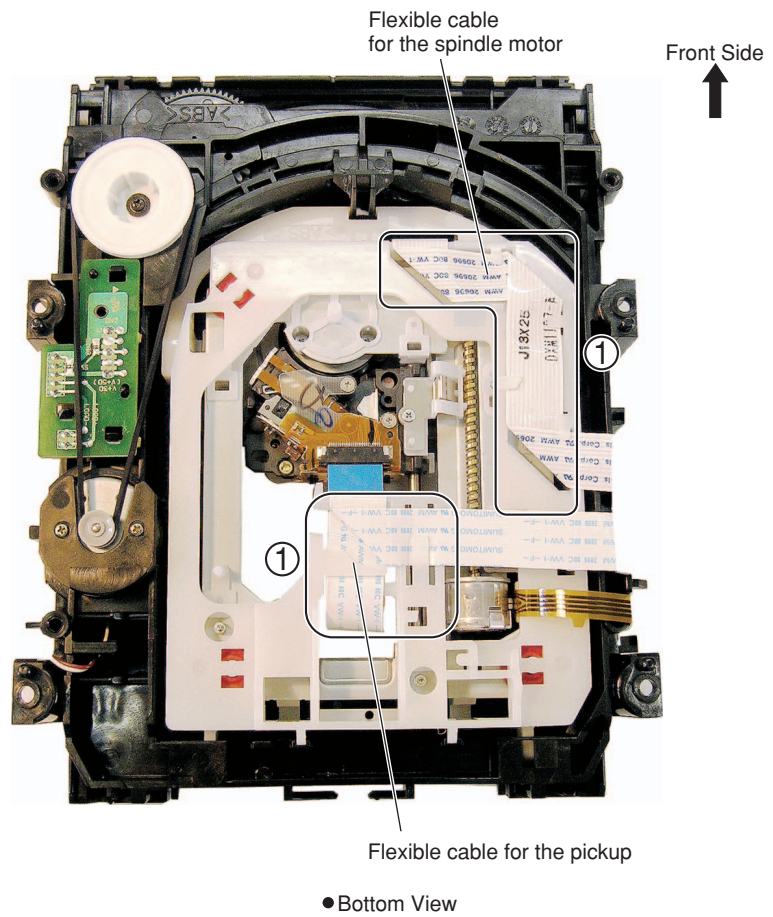
B

C

D

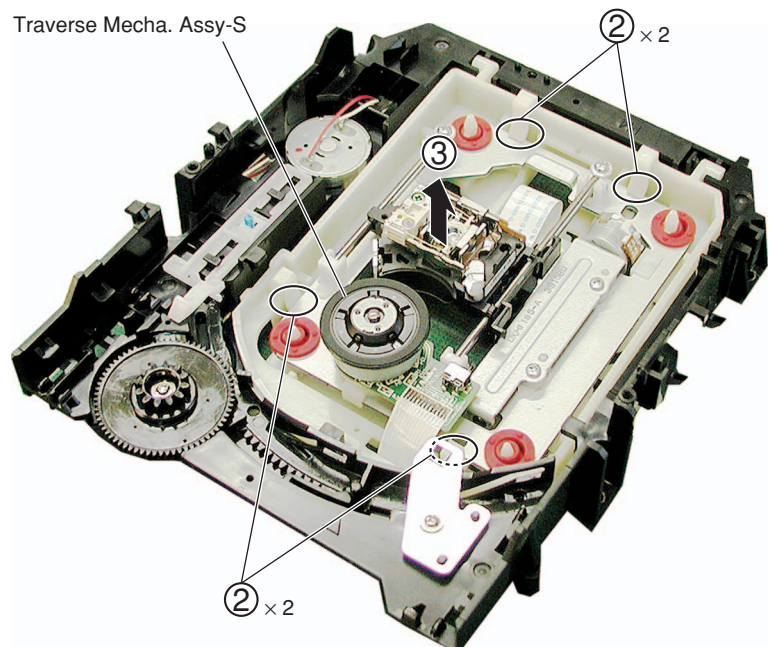
E

F



- ② Remove the four hooks.

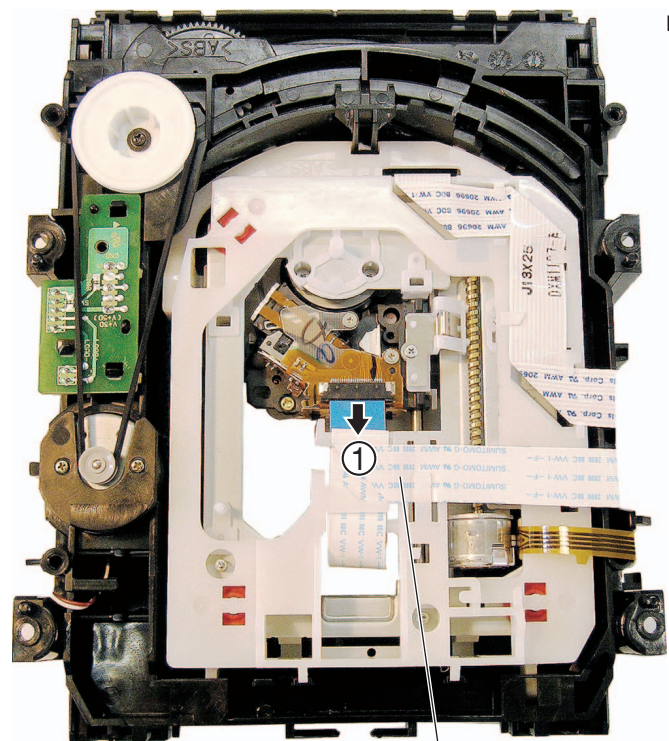
- ③ Remove the Traverse Mecha. Assy-S.



3 03 SD Pickup Assy-S

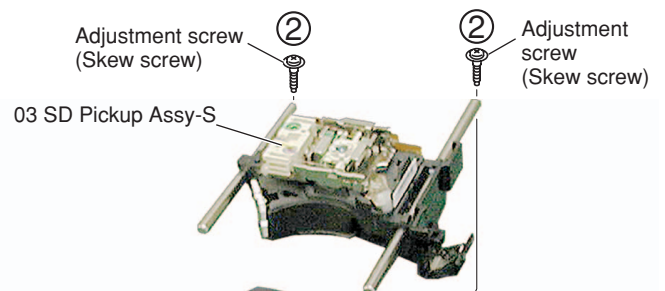
Note: The 03 SD Pickup Assy-S can be removed without removing the Traverse Mecha. Assy-S. (shown as Step 2.)

- ① Remove the flexible cable for the pickup.

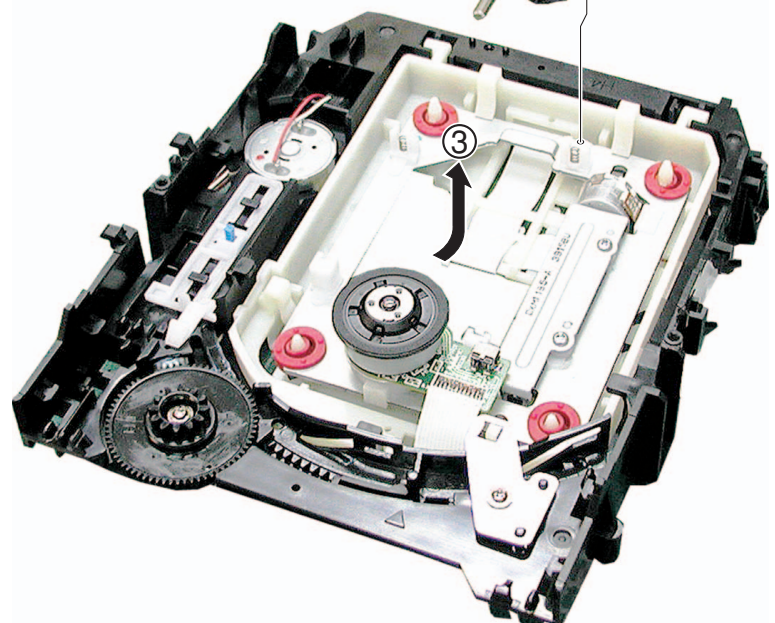
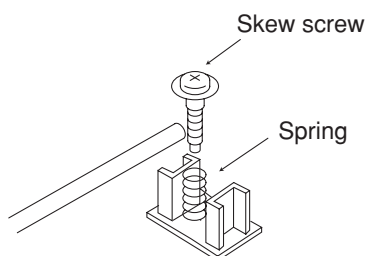


Flexible cable for the pickup
● Bottom View

- ② Remove the two adjustment screws.
- ③ Remove the 03 SD Pickup Assy-S.

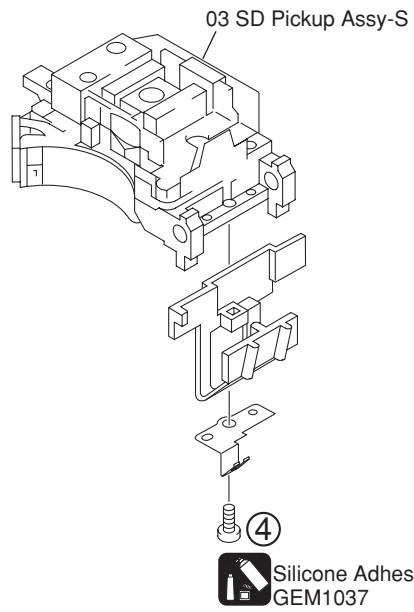


Note:
Be careful not to lose the spring for the skew screw.



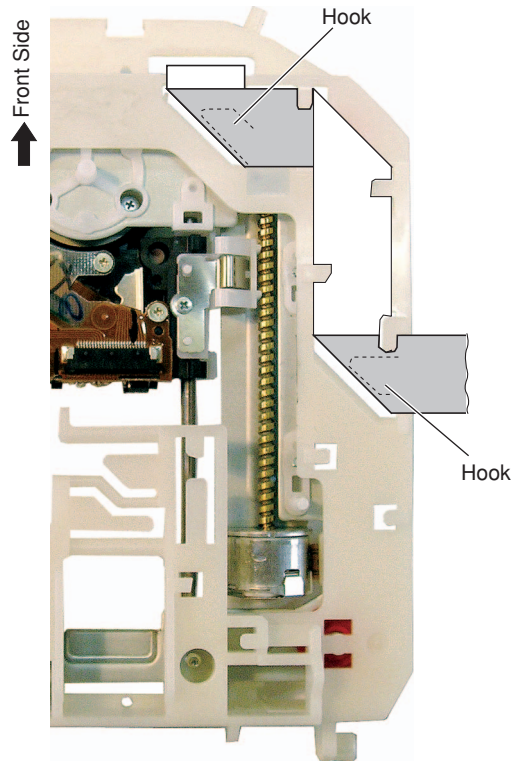
④ Remove the one screw.

Note: The screw is secured with the silicone adhesive.
Make sure to apply the silicone adhesive after reattaching the screw.



Arrangement of the flexible cable for the spindle motor

 : Conductive surface



● Bottom View

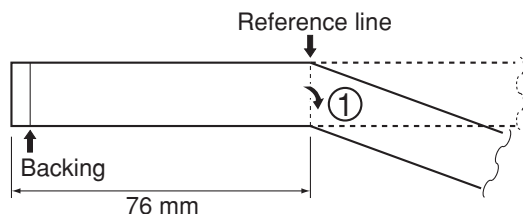
Arrangement of the flexible cable for the pickup

 : Conductive surface

Note:

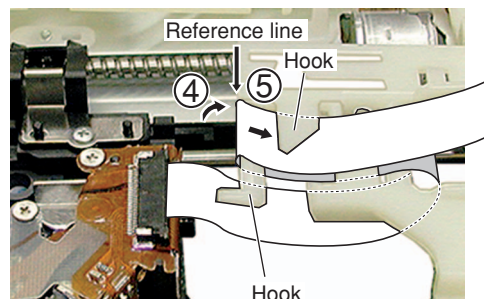
Be sure to move the 03 SD Pickup Assy-S to the innermost perimeter.

- ① Fold the flexible cable of pickup with the backing outward in the illustration below.

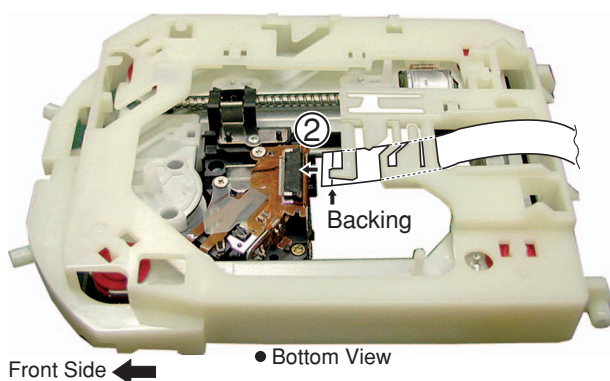


- ④ Hook the part folded in Step ① to the hook.

- ⑤ Pass the flexible cable through the hook.

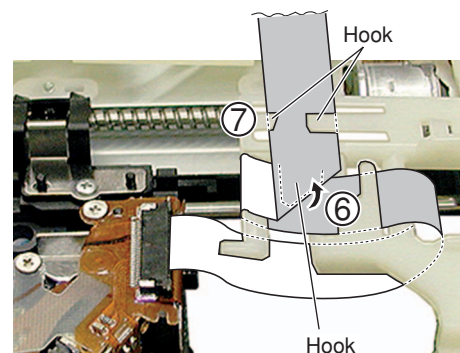


- ② Attach the flexible cable of the pickup to the connector.

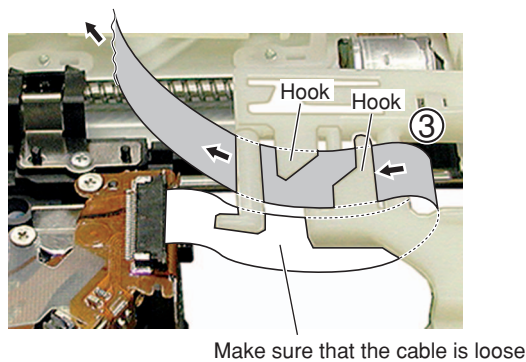


- ⑥ Fold the flexible cable along the hook.

- ⑦ Pass the flexible cable through the hook.



- ③ Pass the flexible cable through the hook.



7.2 IC

- The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

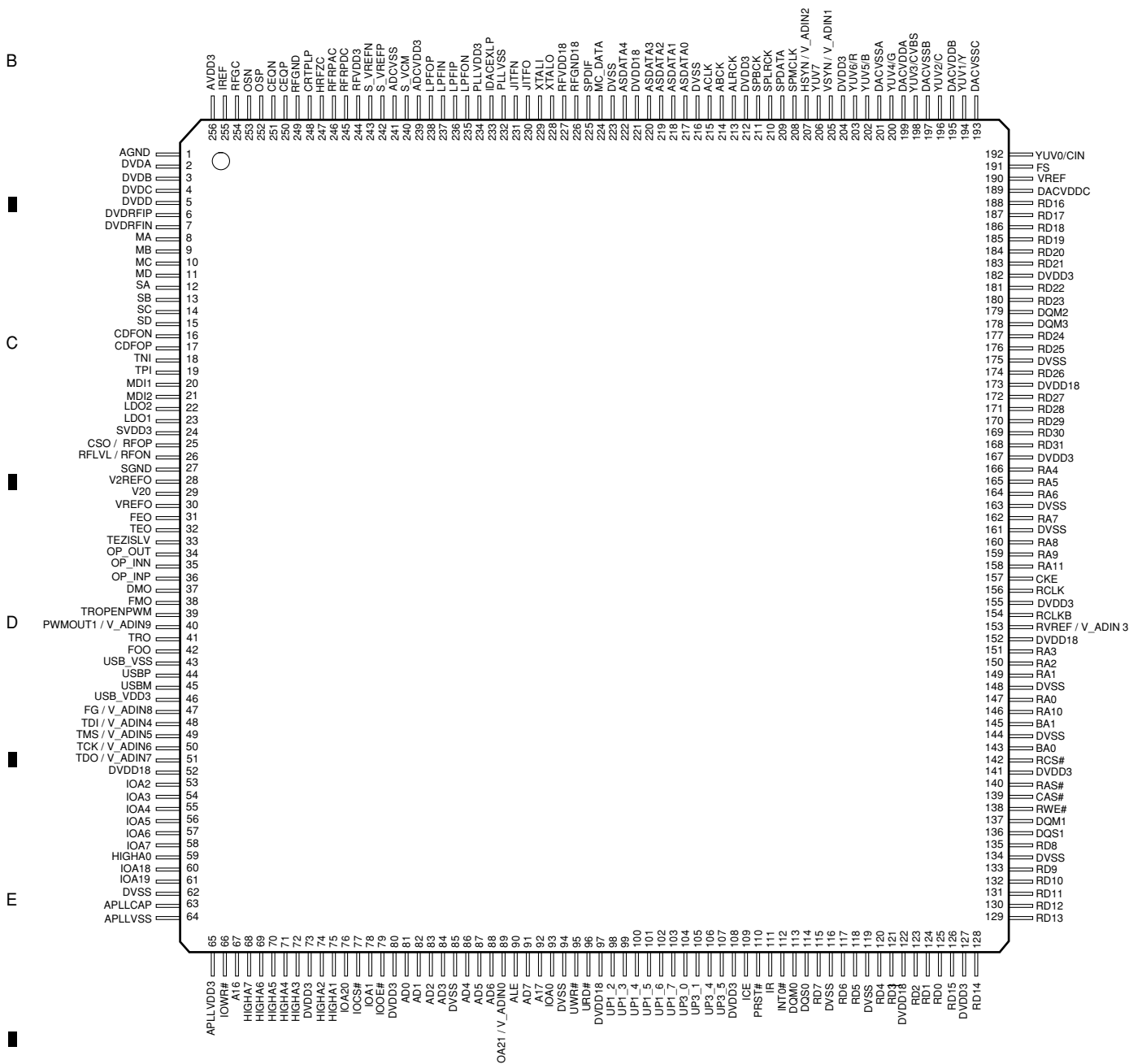
- List of IC

MT1389EE-L1

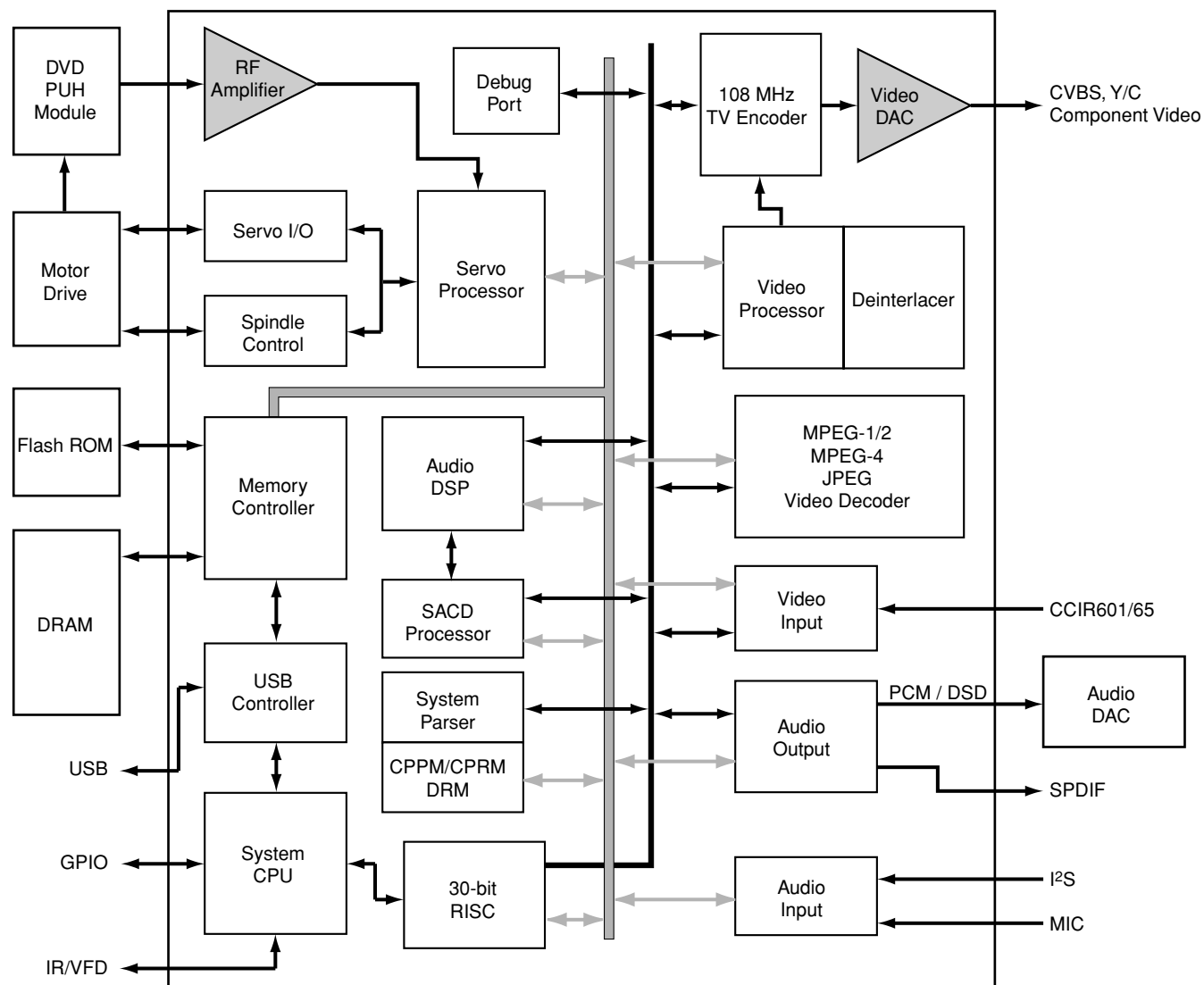
■ MT1389EE-L1 (DVDM ASSY : IC201)

- DVD IC

- **Pin Arrangement**



● Block Diagram



● Pin Function

■ RF Interface (28)

No.	Name	Alt.	I/O	Function
226	RFGND18		Ground	Analog ground
227	RFVDD18		Power	Analog power 1.8V
250	CEQP		Analog output	EQ offset loop capacitance
251	CEQN		Analog output	EQ offset loop capacitance
252	OSP		Analog output	RF Offset cancellation capacitor connecting
253	OSN		Analog output	RF Offset cancellation capacitor connecting
254	RFGC		Analog output	RF AGC loop capacitor connecting for DVD-ROM
255	IREF		Analog Input	Current reference input. It generates reference current for RF path. Connect an external 15K resistor to this pin and AVSS.
256	AVDD3		Power	Analog power 3.3V
1	AGND		Ground	Analog ground
2	DVDA		Analog Input	AC coupled input path A
3	DVDB		Analog Input	AC coupled input path B
4	DVDC		Analog Input	AC coupled input path C
5	DVDD		Analog Input	AC coupled input path D
6	DVDRFIP		Analog Input	AC coupled DVD RF signal input RFIP
7	DVDRFIN		Analog Input	AC coupled DVD RF signal input RFIN
8	MA		Analog Input	DC coupled main-beam RF signal input A
9	MB		Analog Input	DC coupled main-beam RF signal input B
10	MC		Analog Input	DC coupled main-beam RF signal input C
11	MD		Analog Input	DC coupled main-beam RF signal input D
12	SA		Analog Input	DC coupled sub-beam RF signal input A
13	SB		Analog Input	DC coupled sub-beam RF signal input B
14	SC		Analog Input	DC coupled sub-beam RF signal input C
15	SD		Analog Input	DC coupled sub-beam RF signal input D
16	CDFON		Analog Input	CD focusing error negative input
17	CDFOP		Analog Input	CD focusing error positive input
18	TNI		Analog Input	3 beam satellite PD signal negative input
19	TPI		Analog Input	3 beam satellite PD signal positive input

■ ALPC (4)

No.	Name	Alt.	I/O	Function
20	MDI1		Analog Input	Laser power monitor input
21	MDI2		Analog Input	Laser power monitor input
22	LDO2		Analog Output	Laser driver output
23	LDO1		Analog Output	Laser driver output

■ ADC for SACD (5)

No.	Name	Alt.	I/O	Function
239	ADCVDD3		Power	Analog 3.3V Power for ADC
240	S_VCM		Analog Inout	SACD- Common mode reference
241	ADCVSS		Ground	Analog ground for ADC
242	S_VREFP		Analog Inout	SACD- TOP Reference
243	S_VREFN		Analog Inout	SACD- Bottom Reference

■ Reference Voltage (3)

No.	Name	Alt.	I/O	Function
28	V2REFO		Analog output	Reference voltage 2.8V
29	V20		Analog output	Reference voltage 2.0V
30	VREFO		Analog output	Reference voltage 1.4V

■ Analog Monitor Output (7)

No.	Name	Alt.	I/O	Function
24	SVDD3		Power	Analog power 3.3V
25	CSO	RFOP	Analog output	Central servo Positive main beam summing output
26	RFLVL	RFON	Analog output	RFRP low pass, or Negative main beam summing output
27	SGND		Ground	Analog ground
31	FEO		Analog output	Focus error monitor output
32	TEO		Analog output	Tracking error monitor output
33	TEZISLV		Analog output	TE Slicing Level

■ Analog Servo Interface (6)

No.	Name	Alt.	I/O	Function
244	RFVDD3		Power	Analog Power
245	RFRPDC		Analog output	RF ripple detect output
246	RFRPAC		Analog Input	RF ripple detect input(through AC-coupling)
247	HRFZC		Analog Input	High frequency RF ripple zero crossing
248	CRTPLP		Analog output	Defect level filter capacitor connecting
249	RFGND		Ground	Analog Ground

■ RF Data PLL Interface (9)

No.	Name	Alt.	I/O	Function
230	JITFO		Analog output	The output terminal of RF jitter meter.
231	JITFN		Analog Input	The input terminal of RF jitter meter.
232	PLLVS		Ground	Ground pin for data PLL and related analog circuitry.
233	IDACEXLP		Analog output	Data PLL DAC Low-pass filter
234	PLLVD3		Power	Power pin for data PLL and related analog circuitry.
235	LPFON		Analog Output	The negative output of loop filter amplifier
236	LPFIP		Analog Input	The positive input terminal of loop filter amplifier.
237	LPFIN		Analog Input	The negative input terminal of loop filter amplifier.
238	LPFOP		Analog Output	The positive output of loop filter amplifier

■ Motor and Actuator Driver Interface (10)

No.	Name	Alt.	I/O	Function
34	OP_OUT		Analog output	Op amp output.
35	OP_INN		Analog input	Op amp negative input
36	OP_INP		Analog input	Op amp positive input
37	DMO		Analog Output	Disk motor control output. PWM output.
38	FMO		Analog Output	Feed motor control. PWM output.
39	TROPENPWM		Analog Output	Tray PWM output / Tray open output.
40	PWMOUT1	V_ADIN9	Analog Output	1st General PWM output, or Version AD input 9
41	TRO		Analog Output	Tracking servo output. PDM output of tracking servo compensator.
42	FOO		Analog Output	Focus servo output. PDM output of focus servo compensator
47	FG (Digital pin)	V_ADIN8	LVTTL 3.3V Input, Schmitt Input, pull-up , with analog input path for V_ADIN8	Motor Hall sensor input, or Version AD input 8

General Power / Ground (32)

No.	Name	Alt.	I/O	Function
52, 97, 122, 152, 173, 221	DVDD18		Power	1.8V power pin for internal digital circuitry
85, 116, 144, 163, 216	DVSS		Ground	1.8V Ground pin for internal digital circuitry
73, 80, 108, 127, 141, 155, 167, 182, 212	DVDD3		Power	3.3V power pin for internal digital circuitry
62, 94, 119, 134, 148, 161, 175, 223	DVSS		Ground	3.3V Ground pin for internal digital circuitry
204	DVDD3		Power	3.3V power pin Video DAC digital circuitry only
63	APLLCAP		Analog Inout	APLL External Capacitance connection
64	APLLVSS		Ground	Ground pin for audio clock circuitry
65	APLLVDD3		Power	3.3V Power pin for audio clock circuitry

Micro Controller and Flash Interface (48)

No.	Name	Alt.	I/O	Function
59	HIGHA0		Inout, 2-16MA, SR, PU	Microcontroller address 8
75	HIGHA1		Inout, 2-16MA, SR, PU	Microcontroller address 9
74	HIGHA2		Inout, 2-16MA, SR, PU	Microcontroller address 10
72	HIGHA3		Inout, 2-16MA, SR, PU	Microcontroller address 11
71	HIGHA4		Inout, 2-16MA, SR, PU	Microcontroller address 12
70	HIGHA5		Inout, 2-16MA, SR, PU	Microcontroller address 13
69	HIGHA6		Inout, 2-16MA, SR, PU	Microcontroller address 14
68	HIGHA7		Inout, 2-16MA, SR, PU	Microcontroller address 15
91	AD7		Inout, 2-16MA, SR	Microcontroller address/data 7
88	AD6		Inout, 2-16MA, SR	Microcontroller address/data 6
87	AD5		Inout, 2-16MA, SR	Microcontroller address/data 5
86	AD4		Inout, 2-16MA, SR	Microcontroller address/data 4
84	AD3		Inout, 2-16MA, SR	Microcontroller address/data 3
83	AD2		Inout, 2-16MA, SR	Microcontroller address/data 2
82	AD1		Inout, 2-16MA, SR	Microcontroller address/data 1
81	AD0		Inout, 2-16MA, SR	Microcontroller address/data 0
93	IOA0		Inout, 2-16MA, SR, PU	Microcontroller address 0 / IO
78	IOA1		Inout, 2-16MA, SR, PU	Microcontroller address 1 / IO
53	IOA2		Inout, 2-16MA, SR, PU	Microcontroller address 2 / IO
54	IOA3		Inout, 2-16MA, SR, PU	Microcontroller address 3 / IO
55	IOA4		Inout, 2-16MA, SR, PU	Microcontroller address 4 / IO
56	IOA5		Inout, 2-16MA, SR, PU	Microcontroller address 5 / IO
57	IOA6		Inout, 2-16MA, SR, PU	Microcontroller address 6 / IO
58	IOA7		Inout, 2-16MA, SR, PU	Microcontroller address 7 / IO
67	A16		Output, 2-16MA, SR	Flash address 16
92	A17		Output, 2-16MA, SR	Flash address 17
60	IOA18		Inout, 2-16MA, SR, SMT	Flash address 18 / IO
61	IOA19		Inout, 2-16MA, SR, SMT	Flash address 19 / IO
76	IOA20		Inout, 2-16MA, SR, SMT	Flash address 20 / IO
89	IOA21	V_ADIN0	Inout, 2-16MA, SR, SMT	Flash address 21 / IO While External FLASH size <= 2MB: Version AD input port 0, or GPIO

No.	Name	Alt.	I/O	Function
90	ALE		Inout, 2-16MA, SR, PU, SMT	Microcontroller address latch enable
79	IOOE#		Inout, 2-16MA, SR, SMT	Flash output enable, active low / IO
66	IOWR#		Inout, 2-16MA, SR, SMT	Flash write enable, active low / IO
77	IOCS#		Inout, 2-16MA, SR, PU, SMT	Flash chip select, active low / IO
95	UWR#		Inout, 2-16MA, SR, PU, SMT	Microcontroller write strobe, active low
96	URD#		Inout, 2-16MA, SR, PU, SMT	Microcontroller read strobe, active low
98	UP1_2		Inout, 4MA, SR, PU, SMT	Microcontroller port 1-2
99	UP1_3		Inout, 4MA, SR, PU, SMT	Microcontroller port 1-3
100	UP1_4		Inout, 4MA, SR, PU, SMT	Microcontroller port 1-4
101	UP1_5		Inout, 4MA, SR, PU, SMT	Microcontroller port 1-5
102	UP1_6	SCL	Inout, 4MA, SR, PU, SMT	Microcontroller port 1-6 I ² C clock pin
103	UP1_7	SDA	Inout, 4MA, SR, PU, SMT	Microcontroller port 1-7 I ² C data pin
104	UP3_0	RXD	Inout, 4MA, SR, PU, SMT	Microcontroller port 3-0 8032 RS232 RXD
105	UP3_1	TXD	Inout, 4MA, SR, PU, SMT	Microcontroller port 3-1 8032 RS232 TXD
106	UP3_4	RXD SCL	Inout, 4MA, SR, PU, SMT	Microcontroller port 3-4 Hardwired RD232 RXD I ² C clock pin
107	UP3_5	TXD SDA	Inout, 4MA, SR, PU, SMT	Microcontroller port 3-5 Hardwired RD232 TXD I ² C data pin
111	IR		Input, SMT	IR control signal input
112	INT0#		Inout, 2-16MA, SR, PU, SMT	Microcontroller external interrupt 0, active low

Audio Interface (14)

No.	Name	Alt.	I/O	Function
208	SPMCLK	SCLK0	Inout	Audio DAC master clock of SPDIF input While SPDIF input is not used: Serial interface port 0 clock pin GPIO
209	SPDATA	SDIN0	Inout	Audio data of SPDIF input While SPDIF input is not used: Serial interface port 0 data-in GPIO
210	SPLRCK	SDO0	Inout	Audio left/right channel clock of SPDIF input While SPDIF input is not used: Serial interface port 0 data-out GPIO
211	SPBCK	SDCS0 ASDATA5	Inout	Audio bit clock of SPDIF input While SPDIF input is not used: Serial interface port 0 chip select Audio serial data 5 part I : DSD data sub-woofer channel or Microphone output GPIO
213	ALRCK		Inout 4MA, PD, SMT	Audio left/right channel clock Trap value in power-on reset: 1 : use external 373 0 : use internal 373
214	ABCK	Fs64	Output 4MA	Audio bit clock Phase de-modulation
215	ACLK		Inout, 4MA	Audio DAC master clock
217	ASDATA0		Inout, 4MA, PD SMT	Audio serial data 0 (Front-Left/Front-Right) DSD data left channel Trap value in power-on reset : 1 : manufactory test mode 0 : normal operation
218	ASDATA1		Inout, 4MA, PD SMT	Audio serial data 1 (Left-Surround/Right-Surround) DSD data right channel Trap value in power-on reset : 1 : manufactory test mode 0 : normal operation While only 2 channels output: GPIO
219	ASDATA2		Inout, 4MA, PD SMT	Audio serial data 2 (Center/LFE) DSD data left surround channel Trap value in power-on reset : 1 : manufactory test mode 0 : normal operation While only 2 channels output: GPIO
220	ASDATA3		Inout, 4MA, PD SMT	Audio serial data 3 (Center-back/ Center-left-back/Center-right-back, in 6.1 or 7.1 mode) DSD data right surround channel Trap value in power-on reset : 1 : manufactory test mode 0 : normal operation While only 2 channels output: GPIO
222	ASDATA4	INT1#	Inout, 4MA, PD SMT	Audio serial data 4 (Down-mixed Left/Right) DSD data center channel Trap value in power-on reset : 1 : manufactory test mode 0 : normal operation While only 2 channels output: Microcontroller external interrupt 1 GPIO
224	MC_DATA	INT2#	Inout	Microphone serial input While not support Microphone: Microcontroller external interrupt 2 GPIO
225	SPDIF		Output, 2-16MA, SR : ON/OFF	SPDIF output

■ Video Interface (18)

No.	Name	Alt.	I/O	Function
189	DACVDDC		Power	3.3V power pin for VIDEO DAC circuitry
190	VREF		Analog	Bandgap reference voltage
191	FS		Analog	Full scale adjustment
192	YUV0	CIN	Output 4mA, SR	Video data output bit 0 Compensation capacitor
193	DACVSSC		Ground	Ground pin for VIDEO DAC circuitry
194	YUV1	Y	Output 4mA, SR	Video data output bit 1 Analog Y output
195	DACVDDDB		Power	3.3V power pin for VIDEO DAC circuitry
196	YUV2	C	Output 4mA, SR	Video data output bit 2 Analog chroma output
197	DACVSSB		Ground	Ground pin for VIDEO DAC circuitry
198	YUV3	CVBS	Output 4mA, SR	Video data output bit 3 Analog composite output
199	DACVDDA		Power	3.3V power pin for VIDEO DAC circuitry
200	YUV4	Y/G	Output 4mA, SR	Video data output bit 4 Green or Y
201	DACVSSA		Ground	Ground pin for VIDEO DAC circuitry
202	YUV5	B/Cb/Pb	Output 4mA, SR	Video data output bit 5 Blue or CB
203	YUV6	R/Cr/Pr	Output 4mA, SR	Video data output bit 6 Red or CR
205	VSYN	V_ADIN1	Inout 4mA, SR SMT	Vertical sync input/output While no External TV-encoder: Vertical sync for video-input Version AD input port 1 GPIO
206	YUV7	INT3# ASDATA5	Inout 4mA, SR SMT	Video data output bit 7 While no External TV-encoder: Microcontroller external interrupt 3 Audio serial data 5 part II : DSD data sub-woofer channel or Microphone output GPIO
207	HSYN	INT4# V_ADIN2	Inout 4mA, SR SMT	Horizontal sync input/output While no External TV-encoder: Horizontal sync for video-input Microcontroller external interrupt 4 Version AD input port 2 GPIO

■ MISC (8)

No.	Name	Alt.	I/O	Function
43	USB_VSS		USB Ground	USB ground pin
44	USBP		Analog Inout	USB port DPLUS analog pin
45	USBM		Analog Inout	USB port DMINUS analog pin
46	USB_VDD3		USB Power	USB Power pin 3.3V
110	PRST#		Input PU, SMT	Power on reset input, active low
109	ICE		Input PD, SMT	Microcontroller ICE mode enable
228	XTALO		Output	27M crystal out
229	XTALI		Input	27M crystal in

■ DRAM Interface (63)(sorted by position)

No.	Name	Alt.	I/O	Function
188	RD16	LLC_CLK SMPTE_C[0]	Inout Pull-Down	DRAM data 16 While using 16-bits wide DRAM: Line Locked Clock input/output Digital Video output C bit 0 GPIO
187	RD17	YUVIN0 SMPTE_C[1]	Inout Pull-Down	DRAM data 17 While using 16-bits wide DRAM: Video input data 0 Digital Video output C bit 1 GPIO
186	RD18	YUVIN1 SMPTE_C[2]	Inout Pull-Down	DRAM data 18 While using 16-bits wide DRAM: Video input data 1 Digital Video output C bit 2 GPIO
185	RD19	YUVIN2 SMPTE_C[3]	Inout Pull-Down	DRAM data 19 While using 16-bits wide DRAM: Video input data 2 Digital Video output C bit 3 GPIO
184	RD20	YUVIN3 SMPTE_C[4]	Inout Pull-Down	DRAM data 20 While using 16-bits wide DRAM: Video input data 3 Digital Video output C bit 4 GPIO
183	RD21	YUVIN4 SMPTE_C[5]	Inout Pull-Down	DRAM data 21 While using 16-bits wide DRAM: Video input data 4 Digital Video output C bit 5 GPIO
181	RD22	YUVIN5 SMPTE_C[6]	Inout Pull-Down	DRAM data 22 While using 16-bits wide DRAM: Video input data 5 Digital Video output C bit 6 GPIO
180	RD23	YUVIN6 SMPTE_C[7]	Inout Pull-Down	DRAM data 23 While using 16-bits wide DRAM: Video input data 6 Digital Video output C bit 7 GPIO
179	DQM2	YUVIN7	Inout Pull-Up	Data Mask 2 While using 16-bits wide DRAM: Video input data 7 GPIO
178	DQM3	INT6# SMPTE_CLK USB_CLK	Inout Pull-Up	Data Mask 3 While using 16-bits wide DRAM: Microcontroller external interrupt 6 Digital Video output Clock USB port CLK input (48MHz) part II GPIO
177	RD24	SDIN1 MS_BS SMPTE_Y[0]	Inout Non-pull	DRAM data 24 While using 16-bits wide DRAM: Serial interface port 1 data-in MS Card BS pin part II Digital Video output Y bit 0 GPIO
176	RD25	SDO1 MS_SDIO SMPTE_Y[1]	Inout Non-pull	DRAM data 25 While using 16-bits wide DRAM: Serial interface port 1 data-out MS Card SDIO pin part II Digital Video output Y bit 1 GPIO

No.	Name	Alt.	I/O	Function
174	RD26	SDCS1 MSCLK SMPTE_Y[2]	Inout Non-pull	DRAM data 26 While using 16-bits wide DRAM: Serial interface port 1 chip select Memory Stick Clock part II Digital Video output Y bit 2 GPIO
172	RD27	SCLK2 SDCLK SMPTE_Y[3]	Inout Non-pull	DRAM data 27 While using 16-bits wide DRAM: Serial interface port 2 clock pin Security Disk Clock part II Digital Video output Y bit 3 GPIO
171	RD28	SDIN2 SD_CMD SMPTE_Y[4]	Inout Non-pull	DRAM data 28 While using 16-bits wide DRAM: Serial interface port 2 data-in SD Card CMD pin part II Digital Video output Y bit 4 GPIO
170	RD29	SDO2 SD_DAT SMPTE_Y[5]	Inout Non-pull	DRAM data 29 While using 16-bits wide DRAM: Serial interface port 2 data-out SD Card Data pin part II Digital Video output Y bit 5 GPIO
169	RD30	SDCS2 SMPTE_Y[6]	Inout Pull-Up	DRAM data 30 While using 16-bits wide DRAM: Serial interface port 2 chip select Digital Video output Y bit 6 GPIO
168	RD31	INT5# ASDATA5 SMPTE_Y[7]	Inout Pull-Up	DRAM data 31 While using 16-bits wide DRAM: Microcontroller external interrupt 5 Audio serial data 5 part III : DSD data sub-woofer channel or Microphone output Digital Video output Y bit 7 GPIO
166	RA4		Inout	DRAM address 4
165	RA5		Inout	DRAM address 5
164	RA6		Inout	DRAM address 6
162	RA7		Inout	DRAM address 7
160	RA8		Inout	DRAM address 8
159	RA9		Inout	DRAM address 9
158	RA11	GPIO	Inout Pull-Down	DRAM address bit 11 While using DRAM size <=4MB: GPIO
157	CKE		output	DRAM clock enable
156	RCLK		Inout	DRAM clock
154	RCLKB	USB_CLK	Inout	DRAM clock invert While not using DDR: I) USB port CLK input (48MHz) part I
153	RVREF	V_ADIN3	Analog Inout	Reference voltage for DDR DRAM While not using DDR : Version AD input port 3
151	RA3		Inout	DRAM address 3
150	RA2		Inout	DRAM address 2
149	RA1		Inout	DRAM address 1
147	RA0		Inout	DRAM address 0
146	RA10		Inout	DRAM address 10
145	BA1		Inout	DRAM bank address 1
143	BA0		Inout	DRAM bank address 0

No.	Name	Alt.	I/O	Function
142	RCS#		output	DRAM chip select, active low
140	RAS#		output	DRAM row address strobe, active low
139	CAS#		output	DRAM column address strobe, active low
138	RWE#		output	DRAM Write enable, active low
137	DQM1		Inout	Data mask 1
136	DQS1	INT7# MS_BS	Inout	Data strobe 1 for DDR DRAM While not using DDR: Microcontroller external interrupt 7 MS Card BS pin part I GPIO
135	RD8		Inout	DRAM data 8
133	RD9		Inout	DRAM data 9
132	RD10		Inout	DRAM data 10
131	RD11		Inout	DRAM data 11
130	RD12		Inout	DRAM data 12
129	RD13		Inout	DRAM data 13
128	RD14		Inout	DRAM data 14
126	RD15		Inout	DRAM data 15
125	RD0		Inout	DRAM data 0
124	RD1		Inout	DRAM data 1
123	RD2		Inout	DRAM data 2
121	RD3		Inout	DRAM data 3
120	RD4		Inout	DRAM data 4
118	RD5		Inout	DRAM data 5
117	RD6		Inout	DRAM data 6
115	RD7		Inout	DRAM data 7
114	DQS0	SCLK1 MS_SDIO	Inout	Data strobe 0 for DDR DRAM While not using DDR: Serial interface port 1 clock pin MS Card SDIO pin part I GPIO
113	DQM0		Inout	Data mask 0

■ JTAG Interface (4)

No.	Name	Alt.	I/O	Function
48	TDI	SDO3 V_ADIN4 SD_DAT	Inout	JTAG data in While not using Boundary Scan: Serial interface port 3 data-out Version AD input port 4 SD Card Data pin part I GPIO
49	TMS	SDIN3 V_ADIN5 SD_CMD	Inout	While not using Boundary Scan: Serial interface port 3 data-in Version AD input port 5 SD Card CMD pin part I GPIO
50	TCK	SCLK3 V_ADIN6 SDCLK	Inout	JTAG clock While not using Boundary Scan: Serial interface port 3 clock pin Version AD input port 6 Security Disk Clock part I GPIO
51	TDO	SDCS3 V_ADIN7 MSCLK	Inout	JTAG data out While not using Boundary Scan: Serial interface port 3 chip-select Version AD input port 7 Memory Stick Clock part I GPIO

Disc / content format playback compatibility

This player is compatible with a wide range of disc types (media) and formats. Playable discs will generally feature one of the following logos on the disc and/or disc packaging. Note however that some disc types, such as recordable CD and DVD, may be in an unplayable format—see below for further compatibility information.

Please also note that recordable discs cannot be recorded using this player.



- is a trademark of Fuji Photo Film Co. Ltd.
- Also compatible with KODAK Picture CD
- * DV-676A-S only

CD-R/RW compatibility

- Compatible formats: CD-Audio, Video CD/ Super VCD, ISO 9660 CD-ROM* containing

MP3, WMA or JPEG files
 * ISO 9660 Level 1 or 2 compliant. CD physical format: Mode1, Mode2 XA Form1. Romeo and Joliet file systems are both compatible with this player.

- Multi-session playback: No
- Unfinalized disc playback: No

DVD-R/RW compatibility

- Compatible formats: DVD-Video, Video Recording (VR)*
 * Edit points may not play exactly as edited; screen may go momentarily blank at edited points.
- Unfinalized playback: No
- WMA/MP3/JPEG file playback on DVD-R/ RW: No

Compressed audio compatibility

- Compatible formats: MPEG-1 Audio Layer 3 (MP3), Windows Media Audio (WMA)
- Sampling rates: 32, 44.1 or 48kHz
- Bit-rates: Any (128Kbps or higher recommended)
- VBR (variable bit rate) MP3 playback: No
- VBR WMA playback: No
- WMA lossless encoding compatible: No
- DRM (Digital Rights Management) compatible: Yes (DRM-protected audio files will *not* play in this player)
- File extensions: .mp3, .wma (these must be used for the player to recognize MP3 and WMA files – do not use for other file types)
- File structure: Up to 299 folders; up to 648 folders and files combined

About WMA



The Windows Media[®] logo printed on the box indicates that this player can playback Windows Media Audio content.

WMA is an acronym for Windows Media Audio and refers to an audio compression technology developed by Microsoft Corporation. WMA content can be encoded by using Windows Media[®] Player version 7, 7.1, Windows Media[®] Player for Windows[®] XP, or Windows Media[®] Player 9 Series.

Microsoft, Windows Media, and the Windows logo are trademarks, or registered trademarks of Microsoft Corporation in the United States and/or other countries.

PC-created disc compatibility

Discs recorded using a personal computer may not be playable in this unit due to the setting of the application software used to create the disc. In these particular instances, check with the software publisher for more detailed information.

Discs recorded in packet write mode (UDF format) are not compatible with this player.

Check the DVD-R/RW or CD-R/RW software disc boxes for additional compatibility information.

JPEG file compatibility

- Compatible formats: Baseline JPEG and EXIF 2.2* still image files up to a resolution of 3072 x 2048.

**File format used by digital still cameras*

- Progressive JPEG compatible: No
- File extensions: .jpg (must be used for the player to recognize JPEG files – do not use for other file types)
- File structure: Up to 299 folders; up to 648 folders and files combined

7.4 CLEANING

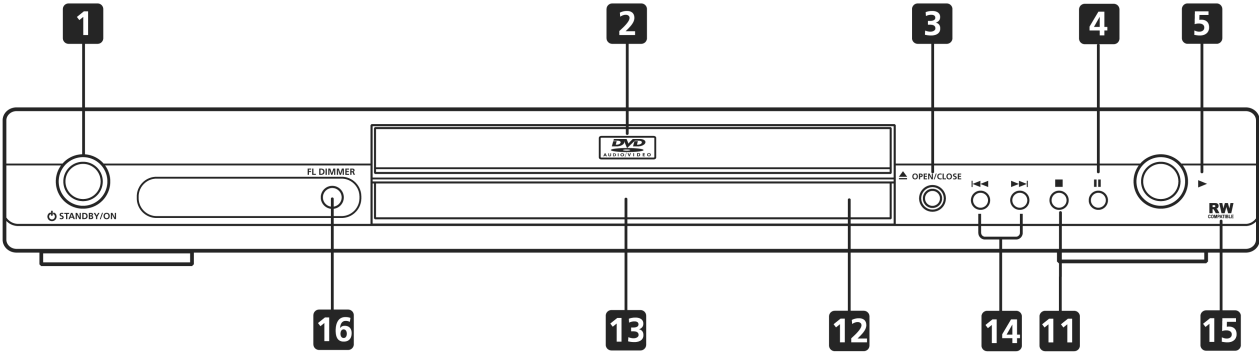


Before shipping out the product, be sure to clean the following positions by using the prescribed cleaning tools:

Position to be cleaned	Cleaning tools
Pickup lenses	Cleaning liquid : GEM1004 Cleaning paper : GED-008

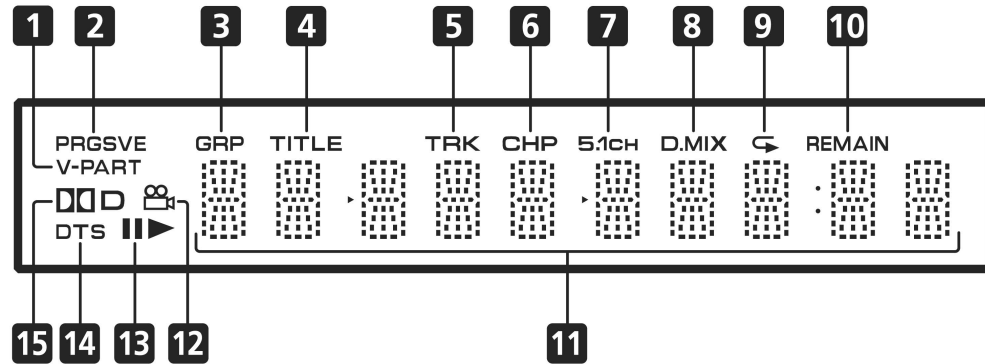
8. PANEL FACILITIES

Front panel



- 1 **STANDBY/ON**
- 2 **Disc tray**
- 3 **OPEN/CLOSE**
- 4 **II**
- 5 **►**
- 6 **DIMMER** Press to change the brightness of the front panel display.
- 7 **Display**
- 8 **Remote control sensor**
- 9 **◀◀ and ▶▶**
- 10 **■**
- 11 **■**
- 12 **Remote control sensor**
- 13 **Display**
- 14 **◀◀ and ▶▶**
- 15 **RW Compatible**
- 16 **DIMMER** Press to change the brightness of the front panel display.

Display



1 V-PART

Lights when playing a video part of a DVD disc.

2 PRGSVE

Lights when the player is set to output progressive scan video.

3 GRP

Indicates that the character display is showing a DVD-Audio group number.

4 TITLE

Indicates that the character display is showing a DVD title number.

5 TRK

Indicates that the character display is showing a DVD-Audio, SACD, CD or Video CD/Super VCD track number.

6 CHP

Indicates that the character display is showing a DVD chapter number.

7 5.1CH

Lights when analog 5.1 channel output is selected.

8 D.MIX

During multichannel audio playback, indicates that the output signal has been “downmixed” from the original audio source. This is an automatic function performed by the player in order to present the most appropriate audio mix to the speakers present in your system.

9 ↺

Lights in any of the repeat play modes.

10 REMAIN

Indicates that the character display is showing the disc or title/chapter/track remain time.

11 Character display

12 ∞

Lights during multi-angle scenes on a DVD disc.

13 || and ►

Indicates whether a disc is playing or paused.

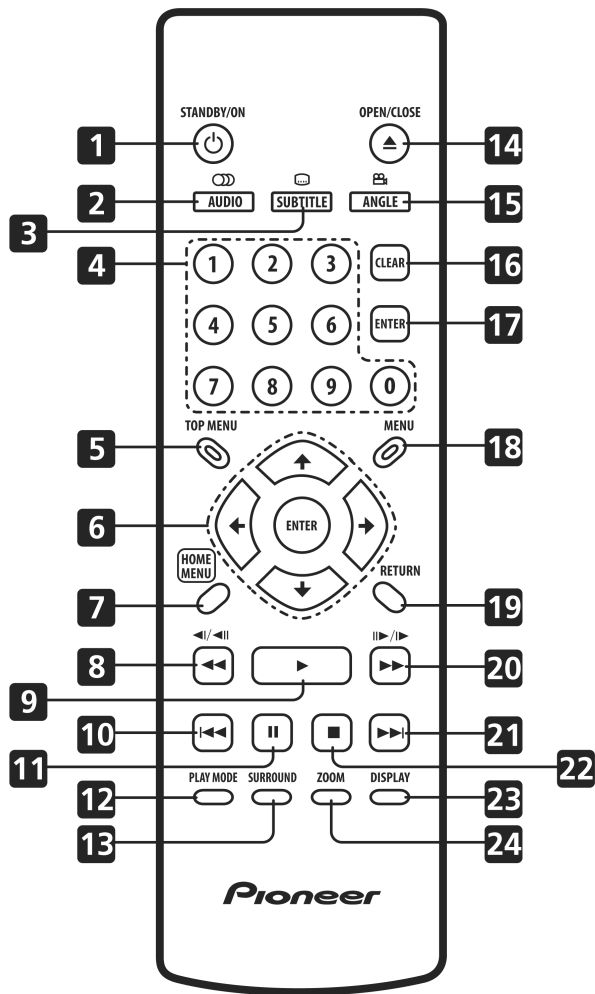
14 DTS

Lights when a DTS soundtrack is playing.

15 DD D

Lights when a Dolby Digital soundtrack is playing.

Remote control



- 1 **STANDBY/ON**
- 2 **AUDIO**
- 3 **SUBTITLE**
- 4 **Number buttons**
- 5 **TOP MENU**
- 6 **ENTER & cursor buttons**
- 7 **HOME MENU**
- 8 **◀◀ and ◀|/◀||**
- 9 **▶**
- 10 **|◀◀**

- 11 **||**
- 12 **PLAY MODE**
- 13 **SURROUND**
- 14 **▲ OPEN/CLOSE**
- 15 **ANGLE**
- 16 **CLEAR**
- 17 **ENTER**
- 18 **MENU**
- 19 **RETURN**
- 20 **▶▶ and |▶/||▶**
- 21 **▶▶|**
- 22 **■**
- 23 **DISPLAY**
- 24 **ZOOM**

Using the remote control

Keep in mind the following when using the remote control:

- Make sure that there are no obstacles between the remote and the remote sensor on the unit.
- The remote has a range of about 7m (23ft.).
- Remote operation may become unreliable if strong sunlight or fluorescent light is shining on the unit's remote sensor.
- Remote controllers for different devices can interfere with each other. Avoid using remotes for other equipment located close to this unit.
- Replace the batteries when you notice a fall off in the operating range of the remote.

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DV-676A-S

Jigs list

A	Name	Jig No.	Remarks
	Service Remote Control Unit	GGF1381	diagnosis
	DVD Data Disc	GGV1175 (& GGV1171)	diagnosis (ID data setting) • GGV1175 is to be released in May, 2004. Use only GGV1175 after GGV1175 was released because GGV1175 includes all the data of GGV1171.
	DVD Test Disc (DVD-Video)	GGV1025	Check of DVD-Video
	CD Test Disc	STD-905	Check of CD
	DVD Test Disc (DVD-Audio)	GGV1070	Check of DVD-Audio

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